

Robert, D. Steel
THE
ART OF RIGGING:

CONTAINING
AN ALPHABETICAL EXPLANATION OF THE
TERMS,

DIRECTIONS FOR THE MOST MINUTE
OPERATIONS,

AND

THE METHOD OF PROGRESSIVE RIGGING:

WITH

FULL AND CORRECT TABLES OF THE DIMENSIONS AND
QUANTITIES OF EVERY PART OF THE RIG-
GING OF ALL SHIPS AND VESSELS.

PARTICULARLY USEFUL TO BOATSWAINS.

ILLUSTRATED WITH NUMEROUS ENGRAVINGS.

L O N D O N :

PRINTED FOR DAVID STEEL, AT HIS NAVIGATION-WAREHOUSE,
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Any Hints for the Improvement of this Work will be thankfully received by the Publisher, D. STEEL, Bookseller, Tower-Hill.

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[This Work is entered at Stationers Hall.]

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P R E F A C E.

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The reputation of that work, and the utility of its parts, have induced the proprietor to publish it in separate treatises, and in a smaller form. In pursuance of that design, he lately published "SEAMANSHIP, BOTH IN THEORY AND PRACTICE," price 7*s.* 6*d.* and "THE ART OF SAIL-MAKING," price 9*s.* He now begs leave to present, to those who pursue and to those who encourage the naval arts, this volume on RIGGING.

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RIGGING.



R I G G I N G.

THE very numerous articles and operations which belong to the rigging of a ship render it somewhat difficult to arrange this subject. The progressive connection of the whole should be shewn, and yet it should be so disposed as to be of easy reference for any particular. To unite these two objects has been our care; and, with that view, we have divided the art of rigging ships into three parts.

The first part contains an alphabetical explanation of the terms and phrases used in rigging:

The second consists of directions for the performance of operations incidental to rigging, and for preparing it on shore: And

The third explains the progressive method of rigging ships.

R I G G I N G. — P A R T I.

EXPLANATION OF THE TERMS USED IN RIGGING.

ARM-GASKET. See **GASKETS.**

ARM-CLEAT. See **CLEATS.**

AWNING. A canvas covering, expanded over the decks of a ship, to screen the crew from, and prevent the decks splitting by, the heat of the sun.

B

BACK-

BACK-STAYS. See **STAYS.**

BAG-REEF. See **REEF.**

BALANCE-REEF. See **REEF.**

BECKETS. Large iron hooks, or short ropes, used in several parts of a ship to confine large ropes, &c. or to hang up the weather-sheets and lee-tacks of the main and fore sail to the foremost main and fore shrouds. The noose made at the breast of a block, to make fast the standing part of a fall to, is also called a becket.

BELAYING. Fastening a rope, by giving it several crosses alternately round two timber-heads, each end of a cleat, pin, &c. Pl. I. fig. 31.

BELAYING-CLEAT. See **CLEATS.**

BELAYING-PINS. See **PINS.**

BELL-ROPE. See **ROPES.**

BENDING. Fastening one rope to another, or to different objects, and fastening a sail to its yard. The different sorts of bends are explained under the word **BENDS**, Part II.

BENDS. The small ropes used to confine the clinch of a cable.

BENTINCK-SHROUDS. See **SHROUDS.**

BIGHT. The noose, or doubled part, of a rope when folded.

BILL-PENDENT. See **PENDENT.**

BITTS. A frame composed of two upright pieces of timber, called the pins, and a cross piece fastened horizontally near the head of them: they are used to belay cables and ropes to. **BOW-LINE** and **BRACE BITTS** are situated near the masts; the **FORE-JEER** and **TOPSAIL-SHEET BITTS** are situated on the fore-castle and round the fore-mast; the **MAIN-JEER** and **TOPSAIL-SHEET BITTS** tenon into the foremost beam of the quarter-deck; the **RIDING-BITTS** are the largest bitts in a ship, and those to which the cable is bitted when the vessel rides at anchor.

BITT-STOPPER. See **STOPPER.**

BLOCKS. Machines used in ships, &c. to encrease the mechanical power of ropes.

BLOCK-AND-BLOCK. The situation of a tackle when the effect is destroyed by the blocks meeting together.

BOARDING-



BOARDING-NETTING. See **NETTING.**

BOATSKIDS. Long square pieces of fir, extending across the ship from the gang-boards, and on which the boats, spare-masts, &c. are stowed.

BOBSTAY. See **STAY.**

BOLSTERS. Bags filled with rope-yarn, or shakings, which are placed under the shrouds and stays, to prevent their chafing against the treble-trees.

BOLT-ROPE. The rope sewed to the edges of sails.

BOOMS. Long poles run out from the extremities of the yards, bowsprits, and sides of the masts, to extend the feet of particular sails. The **DRIVER-BOOM**, on which the foot of the driver, or spanker, is extended, is attached to the mizen-mast, and the outer end hangs over the stern. The **JIB-BOOM** is run out from the outer end of the bowsprit, and extends the foot of the jib. The **MAIN-BOOM**, used in vessels of one or two masts, is similar to the driver-boom of a ship, and on this is spread the foot of the main-sail. The **RINGTAIL-BOOM** is a small boom projecting from the stern of some vessels to spread the foot of the ringtail-sail; and also a small boom, lashed occasionally to the outer end of the mainsail-boom, to spread the foot of the ringtail-sail when hoisted at the after-leech of fore-and-aft main-sails. The **SQUARE-SAIL-BOOM** is lashed across the deck of vessels with one mast, to spread the foot of the square-sail. **STUDDING-SAIL-BOOMS**, to spread the studding-sails, slide through boom-irons at the extremities of the yards, and from the vessel's sides.

BOOM-IRONS. Two flat iron rings formed into one piece, one above the other; employed to connect the booms to the yards, &c. the lower ring is the largest, and is driven on the yard: some boom-irons fasten on the yards with a crotch or strap, secured by nails and hoops.

BOOM-TACKLE. See **TACKLE.**

BOWSING. Hauling or pulling upon a rope or fall of a tackle, to remove a body or increase the tension.

BOWLINE. See **LINES.**

BOWLINE-BITTS. See **BITTS.**

BOWLINE-TACKLE. See **TACKLE.**

BOWSPRIT. The large boom or mast which projects over the stem.

BOWSPRIT-HORSES. See **HORSES.**

BOWSPRIT-NETTING. See **NETTING.**

BOWSPRIT-SHROUDS. See **SHROUDS.**

BRACE. A rope to turn the yards and sails horizontally about the masts, and shift them when necessary. **PREVENTER-BRACE.** A rope used in ships of war, to supply the place of a brace, should that be shot away or damaged. They are led the contrary way, to be less liable to detriment at the same time.

BRACE-BITTS. See **BITTS.**

BRACE-PENDENTS. See **PENDENT.**

BRAILS. Ropes passing through blocks on the gaff, and fastened to the after-leech of fore-and-aft main-sails, to truss or brail them up. Similar also are the brails of stay-sails.

BREAST-ROPE. See **ROPE.**

BREAST-WORK. The rails and stantions on the foremost end of the quarter-deck and poop.

BREAST-WORK NETTING. See **NETTING.**

BRIDLES. Short ropes, or legs, which fasten the bowlines to the cringles on the leeches of sails.

BULL'S EYE. Similar to a thimble, only made of wood, instead of iron. Pl. III. fig. 36.

BUMKINS or **BOOMKINS.** Short booms projecting from each side of the bow, to haul down the fore-tack.

BUMKIN-SHROUDS. See **SHROUDS.**

BUNT-GASKET. See **GASKET.**

BUNT-LINES. See **LINES.**

BURTONS. See **BURTON-TACKLES.**

BUOY-ROPE. See **ROPE.**

BURTON-PENDENTS. See **PENDENTS.**

BURTON-TACKLE. See **TACKLE.**

BUTTON AND LOOP. A short piece of rope, having at one end a walnut knot, crowned, and at the other end an eye. It is used as a becket to confine ropes in.

BUTTONS. Small pieces of thick leather under the heads of nails that are driven through ropes.

CABLET.

CABLET. Any cable-laid rope under nine inches in circumference.

CAPS. Short thick blocks of wood, with two holes in them, used to confine the masts together.

To **CAP** a rope. To cover the end with tarred canvas, which is whipt with twine or spunyarn. Pl. I. fig. 42.

CAPSTERN. A machine for heaving up anchors, or other great strains.

CAST-OFF. To loose a rope, by unseizing it, or by cutting the lashing.

CATHARPINS. Short ropes, to keep the lower shrouds in tight, after they are braced in by swifters, and to afford room to brace the yards sharp.

CATFALL. The rope that forms the tackle for heaving up the anchor from the water's edge to the bow.

CHAIN-BOAT. A large boat fitted with a davit over its stem, and two windlasses, one forward, and the other aft, in the inside. It is used for getting up mooring-chains, anchors, &c.

CHAIN-PLATES. Thick iron plates bolted to the ship's sides, and to which the chains and dead-eyes that support the masts by the shrouds are connected.

CHAINS OR CHANNELS. Broad thick planks, bolted edgewise against the ship's sides, abreast and abaft the masts, used to extend the shrouds from each other, and from the head of the masts.

CHESTREES. Pieces of oak, fitted and bolted to the top-sides of vessels abaft the fore channels, with a sheave in the upper end. They confine the clues of the main-sail, by hauling home the main-tack through the sheave.

CHOAKING THE LUFF. Placing the bight of the leading part or fall of a tackle close up between the next part and jaw of the block.

CHOCK. A thick triangular piece of wood, fastened in a temporary manner in the strap at the arse of the block: on the base of the chock wedges are driven to force the block into its place.

CLAMP. A crooked iron plate, fastened to the after-end of the main-cap of snows, to secure the tryfail-mast.

CLASP-

CLASP-HOOP. See **HOOP.**

CLEATS. Pieces of wood of various shapes, used for stops, and to make ropes fast to: viz. **ARM** or **SLING-CLEATS** are nailed on each side of the slings of the lower yard, and have an arm at one end, which lies over the straps of the jeer-blocks to prevent their being chafed. **BELAYING-CLEATS** have two arms, or horns, and are nailed through the middle to the masts, or elsewhere, to belay ropes to. **COMB-CLEATS** are semi-circular, and are hollowed in the middle to confine a rope to one place. **RANGE-CLEATS** are shaped like belaying-cleats, but are much larger, and are bolted through the middle. **SHROUD-CLEATS** have two arms, similar to belaying-cleats; the inside is hollowed to fit the shroud, and grooves are cut round the middle and ends to receive the seizings, which confine them to the shrouds. Pl. III. fig. 12. **STOP-CLEATS** are nailed to yard-arms, to prevent the slipping of the rigging and the gammoning, and to stop collars on masts, &c. **THUMB-CLEATS** are shaped like sling-cleats, but are much smaller.

CLINCH. That part of a cable which is fastened to the ring of an anchor, &c. See **CLINCHES**, Part II.

CLOTHING THE BOLSTERS. Laying several thicknesses of worn canvas, well tarred, over them, to make an easy bed for the shrouds.

CLUE-GARNETS. Tackles connected to the clues of main and fore courses, to truss the sail up to the yard.

CLUE-LINES. See **LINES.**

COIL. Rope laid in regular folds for the convenience of stowage, and hanging upon cleats, to prevent its being entangled.

COLLAR. The upper part of a stay; also a rope formed into a wreath, by splicing the ends together, with a heart, or dead-eye, seized in the bight, to which the stay is confined at the lower part. Pl. I. fig. 42.

COMB-CLEAT. See **CLEATS.**

CRINGLES. Small loops made on the bolt-rope of a sail; used to fasten different ropes to, hook the reef-tackles to, for drawing the sail up to its yard, to fasten the bridles of the bowline to, and to extend the leech of the sail, &c.

CROSS-

CROSS-JACK-YARD. See **YARD**.

CROTCHES. Pieces of wood or iron, the upper part of which is composed of two arms, resembling a half-moon. They are chiefly used to support spare-masts, &c.

CROSS-TREES. Short flat pieces of timber, let in and bolted athwartships to the trestle-trees, at the mast-head, to support the tops, &c.

CROW-FOOT. An assemblage of small cords, which reeve through holes, made at regular distances, through the uphroe: its use is to suspend the awnings, and keep the foot of the top-sail from striking under the tops.

CROWN OF THE CABLE. The bights which are formed by the several turns.

CROWNING. The finishing of a knot made on the end of a rope. Pl. I. fig. 40.

CUNTLINE. The spiral intervals that are formed between the strands of a rope, by their being twisted together.

DAVIT. A short boom fitted in the fore-channel, and used as the arm of a crane to hoist the flukes of the anchor clear of the ship's side, till high enough to lay on the gunwale, and fastened by the shank-painter.

DAVIT-ROPE. See **ROPE**.

DEAD-EYES. Round flat wooden blocks, with three holes instead of sheaves, through which the laniards reeve, when setting up the shrouds, or stays. The power gained by dead-eyes is as the number of parts of the laniards rove through them; but, if the laniards be not well greased, the power will be greatly lost by friction, so that they are never applied as purchases, but merely for the better keeping the quantity gained of any shroud, or stay, when set up, and are much stronger than blocks with sheaves, the strain not lying on a single pin.

DECK-STOPPER. See **STOPPER**.

DERRICK. A tackle used at the outer quarter of a mizen-yard, consisting of a double and single block, connected by a fall; also a *diagonal* shore, as a support to sheers; also a single spar, top-mast, or boom, raised upright, and supported by guys at the head,

whence

whence hangs a tackle over the hatchway, the heel working in a socket of wood fastened on the deck.

DOG-STOPPER. See **STOPPER.**

DRIVER-BOOM. See **BOOM.**

DRIVER-YARD. See **YARD.**

DOLPHIN. A rope lashed round the mast as a support to the pudding.

DOWNHAULER. A rope which hauls down the stay-fails, studding-fails, and boom-fails, to shorten fails, &c.

EARINGS. Small ropes employed to fasten the upper corners of fails.

EASE-OFF, or VEER-AWAY. To slacken a rope gradually.

ENTERING-ROPE. See **ROPE.**

EYE OF A SHROUD. The upper part, which is formed into a sort of collar to go over the mast-heads.

EYELET-HOLES. The holes made in the head and reefs of fails.

FAKE. One of the turns of a rope when stowed, or coiled.

FALL. The rope that connects the blocks of a tackle; but the fall sometimes implies only the loose part which is pulled upon to produce the desired effect.

FANCY-LINES. See **LINES.**

FANGS, or LEE-FANGS. A rope fastened to a cringle, near the foot of a ketch's wing-fail, to haul in the foot of the fail for lacing on the bonnet or taking in the fail.

FENDERS. Pieces of wood, or old cable, bags of old rope-yarn, shakings, cork, or other materials, hung by a laniard over a vessel's sides, to prevent her being damaged. Pl. III. fig. 42.

FID. A square bar of iron, or wood, driven through a hole in the heel of a top-mast, when raised at the head of a lower-mast; it, resting on the trestle-trees, supports the top-masts, &c. The top-gallant-mast is retained in the same manner at the head of the top-mast, and the royal-mast above that.

FIDS. Round tapering pins of various sizes, made of iron, or hard wood, and used for splicing of cordage.

FISH-TACKLE. See **TACKLE.**

FISH-

FISH-TACKLE PENDENTS. See **PENDENTS.**

FLAG-STAFF. See **STAFF.**

FLAG-STAFF STAYS. See **STAYS.**

FLEETING. Changing the situation of a tackle, by placing the blocks farther asunder, the force being destroyed by the blocks meeting, called block-and-block.

FLEMISH HORSES. See **HORSES.**

FLY OF A FLAG. The opposite part to the hoist.

FLYING OF SAILS. Setting them in a loose manner; as royal sails without lifts, or sheets, the clues being lashed; as small topgallant-fails, jibs, without stays; and as studding-fails, without booms.

FORE-TOPGALLANT-STAY TACKLE. See **TACKLE.**

FOUL implies entangled, as the tackle is when twisted. The cables are **FOUL** when twisted round each other, by a vessel's turning round the anchors by which she rides.

FOXES. Twisted rope-yarns, used for making of rope-bands, &c. &c.

FRAPPING. Taking several turns round the middle of a lashing, or any number of ropes, and drawing the several parts tight together.

FURLING. Wrapping, or rolling, a sail close up to its yard, mast, or stay, and fastening it up with gaskets, lines, &c.

FURLING-LINE. See **LINES.**

FUTTOCK-PLATE. A narrow plate of iron, having a dead-eye bound in the upper end. An eye is made in the lower end, which is put through a mortise in the sides of the top, to hook the futtock-shroud to.

FUTTOCK-SHROUD. See **SHROUD.**

FUTTOCK-STAVE. A short piece of rope served over with spunyarn, to which the shrouds are confined at the catharpins.

GAFF. A pole used to extend the head of the mizen course of a ship, and the fore-and-aft mainfails of smaller vessels.

GAMMONING. The rope which binds the inner quarter of the bowsprit close down upon the stem, that it may rest well in its bed.

GANGWAY-NETTING. See **NETTING.**

GASKETS. Braided cordage used to confine the sail to the yard, when furled, &c. **ARM-GASKETS;** those which are used at the extremities of yards. **BUNT-GASKETS** are those used in the middle of yards. **QUARTER-GASKETS;** those used between the middle and extremities of the yards.

GIRT-LINES. See **LINES.**

GRIPES. Short ropes with dead-eyes, used to confine the boats to the deck.

GROMMETS. Rings made of worn rope, which are used to confine the nock of spritsails to the mast, and the oars of boats to the pins, instead of rowlocks, &c.

GUEST-ROPE. See **ROPE.**

GUN-SLINGS. Similar to bale-slings, and are used for hoisting in the guns. Pl. III. fig. 50.

GUYS. Ropes to steady sheers, davits, or derricks, when charged with any weighty body.

GUY-PENDENTS. See **PENDENTS.**

HAGSTEETH. Those parts of pointing, matting, or the like, which are intertwisted with the rest in an irregular manner.

HALIARDS. Ropes or tackles employed to hoist or lower yards, sails, and flags, upon the masts, yards, stays, &c.

HAND-TIGHT. A moderate degree of tension on a rope, so as to make it strait.

HANKS. Rings made of iron, or hoopsticks bent in a circular form, fixed on the stays to confine the stay-sails.

To HAUL. To pull on a rope.

HEAD-LINE. See **LINES.**

HEAD-NETTING. See **NETTING.**

HEART. A peculiar sort of dead-eye, resembling a heart: it has one large hole in the middle, to contain the laniard, by which the stays or shrouds are extended.

HEAVER. A short wooden staff, used as a lever in setting up the topmast-shrouds, strapping of blocks, and seizing the rigging, &c.

HEAVING. The act of turning about a capstern, &c. by means of bars or handspikes.

HEEL-

HEEL-ROPE. See **ROPE**.

HITCH. A noose, by which one rope is fastened to another, or to some object, as a ring, post, timber-head, &c.

HOIST OF A FLAG OR SAIL. That part which is towards the staff, or bent to a mast or stay.

HOISTING. Drawing up a weight by tackles.

HOLDING-ON. The act of pulling back and retaining any quantity of rope, acquired by the effort of a capstern or tackle; also the end of a stopper, nipper, &c. held by the hand.

HOOPS. Thin bars of iron, of circular and other shapes. **CLASP-HOOPS** are similar to other hoops, but open with a hinge. **BUOY-HOOPS** are the wooden hoops that confine the buoy; and the wreaths of rope that go round the buoy, to which the straps are fastened. **WOODEN-HOOPS** are those which encircle masts, and to which the fore-leech of some sails are bent,

HORNS. The jaws, or semi-circular inner ends, of booms and gaffs.

HORSE. A machine with which the operation of woolding is performed.

HORSES. Ropes for the men to stand upon, or hold by, &c. **BOWSPRIT-HORSES** are made fast at the ends, at a parallel height from the bowsprit, and serve as rails for the men to hold by, when going out upon the bowsprit. **FLEMISH-HORSES** are small horses under the yards, without the cleats. **JIB-HORSES** hang under the jib-boom, and are knotted at certain distances, to prevent the men's feet from slipping. **TRAVERSE-HORSES** are of rope or iron, for sails to travel on, &c. The one of rope is thick, and extended up and down parallel to the mast; that on the fore-side is for hoisting or lowering the square-sail, whose yard is attached to the horse by a traveller, and slides up and down occasionally. The horse fixed abaft the mast is for the tryfail of a snow, which slides up and down with hanks as a stayfail. This is seldom used but in sloops of war, which occasionally assume the form of snows. **HORSES OF IRON** are thick iron rods, fastened at the ends athwart the deck of single-mast vessels, before the mast, for the foresail-sheet to travel on; and that abaft the mast, across the inside of the stern, on which travels the main-sheet block. **YARD-HORSES** are ropes

depending from the yards, for the men to stand upon in loosing, reefing, or furling, the sails.

HOUNDS. That part of the mast-head which gradually projects on the starboard and larboard sides, beyond the cylindrical surface below.

HOUSE-LINE. See **LINEs**.

JACK-BLOCK. A small block seized to the topgallant-mast-head, for sending the topgallant-yards up and down.

JAMBED. Obstructed and rendered immovable.

JAWS. Two cheeks, forming a semi-circle, which enclose the after-part of the mast, so as to confine, by the help of the parrel, the inner end of the boom or gaff.

JEARS. Tackles for hoisting or lowering the lower yards.

JEAR-BITTS. See **BITTS**.

JEWEL-BLOCKS. Small blocks, seized to eye-bolts in the extremities of the upper yards, for hoisting the studding-sails by the haliards, which reeve through them.

JIB-BOOM. See **BOOM**.

JIB-HORSES. See **HORSES**.

JIGGER. A short rope fitted, with a block and a sheave, for holding on the cable as it is hove in by a windlass.

JIGGER-TACKLE. See **TACKLE**.

INHAULER. A rope employed to haul in the jib-boom, &c.

IRON HORSES. See **HORSES**.

JUNK. Short pieces of old cable, used for mooring ships sterns, or cut into smaller portions for making mats, rope-bands, points, gaskets, &c.

KECKLING. Any old rope wound about a cable, to preserve the surface of it from chafing.

KEVELS. Two crooked pieces of timber, whose lower ends rest in a step or foot nailed to the ship's sides; the heads branch out like horns, to belay ropes to.

KINKING. The curling up of a rope when twisted too hard or drawn hastily out of the coil.

KNOTS. The fastenings by which one rope is joined to another; or the knobs formed on their ends to prevent their slipping.

LACING.

LACING. Fastening the head of a sail to a mast, yard, gaff, &c. by a line turned spirally round them, and reeved through the eyelet-holes in the sail.

LANIARDS. Short small ropes to make fast the shrouds, stays, &c.

LASHERS. The ropes employed to lash, or secure, particular objects, as jeers, &c.

LASHING. Fastening or securing one thing to another, with several turns of a rope.

LEADING PART. That part of a tackle which is hauled upon.

LEGS. Short ropes which branch out into two or more parts, as the bowline-legs or bridles, buntline-legs, crowfoot-legs, &c.

LIFE-LINES. See **LINES.**

LIFTS. Ropes which suspend the outer-quarters of the yards, and raise or lower them. **STANDING-LIFTS** are made fast, and belong to yards that never require to be topped.

LINES. Cordage smaller than ropes, and formed of two or more fine strands of hemp: as **HOUSE-LINE**, made of three strands, used to seize blocks into their straps and the clues of sails; and to marl the skirts of sails to their bolt-ropes, &c. **LOG-LINE**, made of three or more strands, and used for the log, &c. **MARLINE**, made of two strands, and used for the same purposes as house-line.

Some ropes are, from their use or situations, termed lines; as **BOWLINES**, **BUNTLINES**, **CLUE-LINES**, **FANCY-LINE**, **FURLING-LINE**, **GIRT-LINE**, **HEAD-LINE**, **LEECH-LINES**, **LIFE-LINES**, **NAVE-LINE**, **SLAB-LINE**, **SPILLING-LINES**, **TOW-LINE**, and **TRICING-LINE**.

BOWLINES are fastened on and near the middle of the leech of square sails, by two or three subordinate parts, called bridles; and are used to brace sideways, or close-haul to the wind, the weather, or windward, leeches of the sails forward; which are kept steady by the tension of the bowline. **BUNTLINES** are ropes fastened to the foot of square sails, to haul them up to their yards. **CLUE-LINES** are similar to the clue-garnets, and are used to square sails in general; whereas clue-garnets are confined to the main and fore

fore courses. **FANCY-LINE** is a rope used to overhaul the brails of some fore-and-aft sails. **FURLING-LINE** is a small rope, or a line, used to fasten small sails to the yards, when furled. **GIRT-LINE** is a rope reeved through a single block, occasionally lashed to mast and sheer heads, to hoist up rigging, &c. **HEAD-LINE** is the line sewed along the upper edge of flags to strengthen them. **LEECH-LINES** are ropes used to truss up the sails. **LIFE-LINES**, for the preservation of the seamen, are worn hawser-laid rope: they make fast with two half-hitches round the strap of the lift-block and jeer, or tye-blocks, in the middle of the yard. **NAVE-LINE** is a tackle depending from the mast-head to the trusses, to keep them opposite the yards, whilst hoisting or lowering. **SLAB-LINE** is a rope used to truss up the foot of the main and fore courses occasionally, for the pilot or master to look forward underneath, as the ship advances. **SPILLING-LINES** are ropes reeved through blocks, lashed on each side of the quarter-blocks of the lower yards, then lead down before the sail, return upwards under the foot, and make fast round the yard with a timber-hitch: Spilling-lines of topails have two legs, which are each made fast with a timber-hitch round the quarters of the topfail-yards, then lead down on the aftside, return upwards under the foot of the sail, and reeve through a block on the fore-side, lashed to the tye-block on the yard, and then lead upon deck abaft the mast. **TOW-LINE** is a small hawser, used to remove any vessel, by means of anchors, capsterns, &c. **TRICING-LINE** is a small rope or tackle used to hoist any object to a higher station, and render it more convenient; such are the tricing-lines of the yard-tackles: the inner tricing-line hoists the block, and the outer tricing-line the parts of the tackle.

LIZARD. An iron thimble spliced into the main-bowlines, and pointed over to hook a tackle to.

LOG-LINES. See **LINES**.

LOOP. A noose made in a rope.

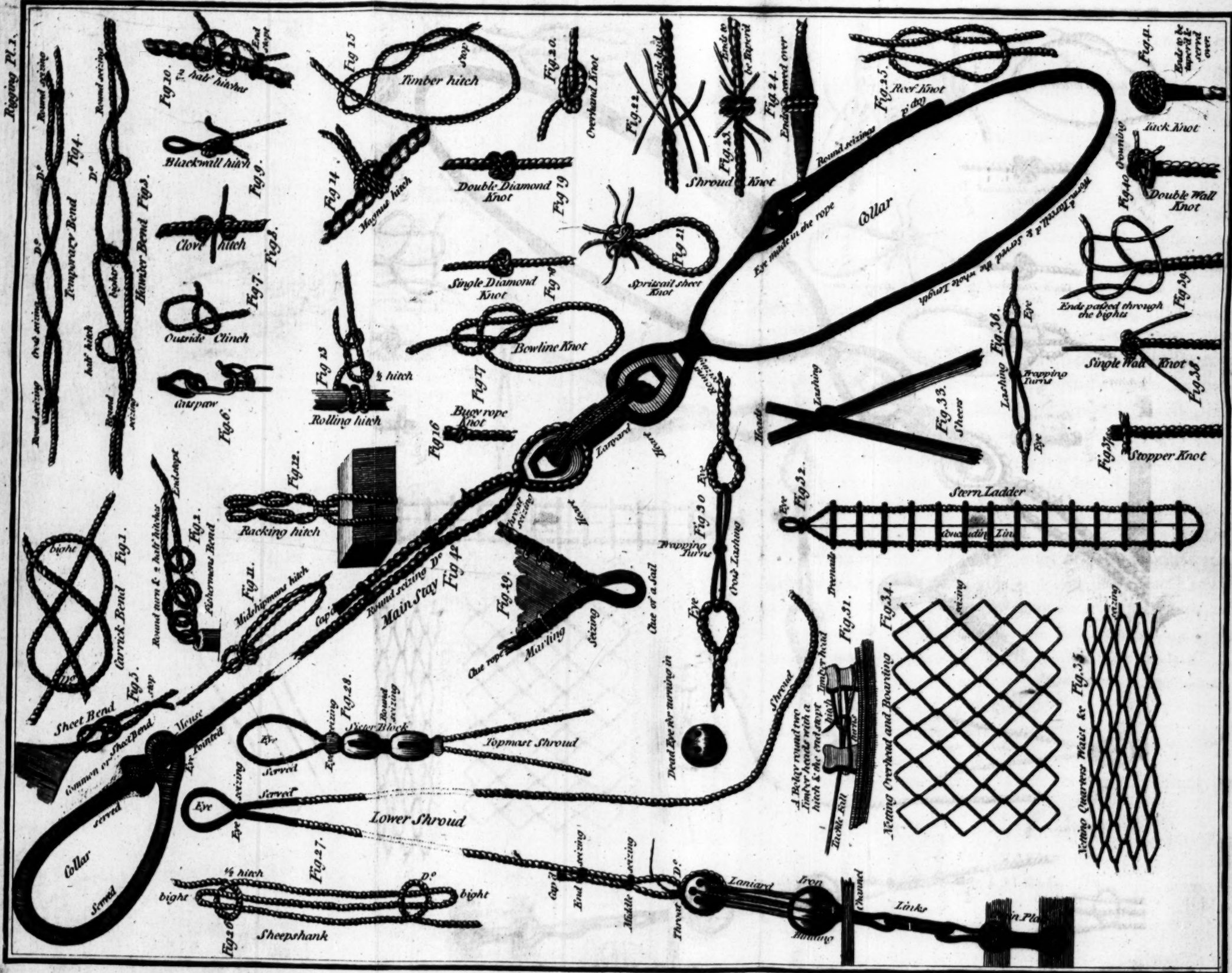
LOOSING THE SAILS. Unfurling them for setting, or for drying, when wet.

LOWER-SHROUDS. See **SHROUDS**.

LOWER-STAYS. See **STAYS**.

LUFF-TACKLE. See **TACKLE**.

MAIN-



MAIN-STAY-TACKLE PENDENTS. See **PENDENTS.**

MAIN-BOOM. See **BOOM.**

MAN-ROPES. See **ROPES.**

MARLINE. See **LINES.**

MARLING-SPIKE. A tapered iron pin, with a globular head, used to make openings between the strands of ropes for introducing the ends of others through them: it is sometimes used as a lever to strain tight seizings, &c.

MARTINGAL. An ash bar, fixed downwards from the fore-side of the bowsprit-cap, and by which the martingal-stay supports the jib-boom.

MARTINGAL-STAY. See **STAY.**

MASTS. Long cylindrical pieces of timber, to which are fastened the yards, sails, and rigging.

MAST-COATS. Coverings made of well-tarred canvas to prevent the water going down the mast-hole.

MAT. A thick texture made of spunyarn, strands of rope, or foxes, wove or plaited together, and fastened upon masts, yards, &c. to prevent their chafing. Pl. III. fig. 34.

MESSENGER. A cable-laid rope, used to heave in the cable.

MESHES. The spaces between the lines of a netting.

MOUSE. A large knob, in the shape of a pear, formed on stays; Pl. III. fig. 42. also a smaller one round messengers, by intertwisting a small rope round the strands. Pl. II. fig. 12.

MOUSING A HOOK. Taking several turns of spunyarn round the back and point of a hook, and fastening it, to prevent its unhooking.

NAVE-LINE. See **LINES.**

NETTING, Pl. I. fig. 34 and 35. A fence made by seizing together the **BIGHTS** of small ropes, leaving uniform spaces or meshes between: it is used in different parts of a ship; thus, the **BOARDING-NETTING** is thrown over the sides, to prevent the enemies boarding. **BOWSPRIT-NETTING** is fastened at the outer end of a bowsprit to the horses, or man-ropes, to stow away the fore-topmast-stay-sail and jib. **BREASTWORK, GANGWAY, QUARTER,** and **WAIST, NETTINGS** are used to keep the hammocks in the stantions. **HEAD-NETTING** is fastened to the horses in the head

head and upper rail, to save the men from slipping overboard. **QUARTER-DECK-NETTING** is suspended over the officer's heads, to prevent any thing falling thereon, in time of action. **TOP-NETTING** is fastened to the rail, shrouds, and top, to preserve the men from falling.

To **NIPPER** or **NIP** ropes is to stop them with several turns of rope-yarn, or spunyarn, round each, and the ends made fast.

NIPPERS. Braided cordage twelve or fourteen feet long, used in heaving in the cable by the viol, or messenger.

NORMAN. A short wooden bar, with a head, used in one of the holes of the windlafs, when there is little strain on the cable.

NUT-SLINGS. Similar to bale-slings, used in hoisting in guns. Pl. III. fig. 50.

OAKUM. Old ropes untwisted and picked small.

OVERHAULING. Extending the several parts of a tackle, or ropes, connected to blocks or dead-eyes, to any distance required.

OUTHaulER. A rope made fast to the tack of the jib, to haul it out by.

PAINTER. A rope secured to the bow of a boat to make her fast with.

PANCH. A covering of wood, or a thick texture made of plaited rope-yarn, larger than a mat, to preserve the masts, &c. from chafing.

PARCELLING. Wrapping worn canvas round ropes, to prepare them for serving. Pl. III. fig. 21.

PARRAL. A sort of collar, by which the yards are fastened at the slings to the masts, so that they may be hoisted or lowered with facility. Pl. III. fig. 27 and 28.

PARRAL-TRUCKS. See **TRUCKS**.

PASSAREE. Any rope fastened round the cat-head and fore-tack, to keep tight the leech of the sail in light winds.

To **PAY OUT**. To let a cable or other rope run out of the vessel.

PEEK-HALIARDS. The ropes by which the outer end of a gaff or yard, that hangs obliquely to a mast, is hoisted.

PENDENTS.

PENDENTS. Large, but short, ropes which go over the mast-heads, and to which are hooked the main and fore tackles. There are, besides, many other pendants, with a block or tackle attached to one end, all of which serve to transmit the effort of their tackles to some other object: such are the **BILL-PENDENT**, **BRACE-PENDENTS**, **PREVENTER-BRACE PENDENTS**, **BURTON-PENDENTS**, **FISH-PENDENTS**, **GUY-PENDENTS**, **MAIN-STAY-TACKLE PENDENTS**, **PENDENTS OF TACKLES**, **QUARTER-TACKLE PENDENTS**, **REEF-TACKLE PENDENTS**, **RUDDER-PENDENTS**, **STAY-TACKLE PENDENTS**, **TOP-ROPE PENDENTS**, **TRUSS-PENDENTS**, **VANG-PENDENTS**, **WINDING-TACKLE PENDENTS**, and **YARD-TACKLE PENDENTS**. For the preparation of these pendants, see the next Part.

PINS, for belaying ropes to, are turned wooden pins, with a shoulder near the middle; the small end is driven through the rough-tree rails, or racks of thin plank made on purpose. Iron belaying-pins are round, taper from the middle to each end, and are driven in the rails, or racks, to belay the ropes to, by taking several cross turns about them.

POINTING. Tapering the end of a rope, or splice, and working over the reduced part a small close netting, with an even number of knittles twisted from the same, to prevent the end untwisting, and to go more easily through a block or hole.

POINTS. Short pieces of braided cordage plaited together.

PORT-TACKLE. See **TACKLE**.

PREVENTER. An additional rope, employed sometimes to support or answer the purpose of another that has a great strain, or is injured. Such are the **PREVENTER BRACES**, **SHROUDS**, **STAYS**, &c.

PREVENTER-STAYS. See **STAYS**.

PREVENTER-SHROUDS. See **SHROUDS**.

PREVENTER-STAY TACKLE. See **TACKLE**.

PREVENTER-BRACE PENDENT. See **PENDENTS**.

PUDDENING. A thick wreath, made of rope, fastened about the main and fore masts of a ship; to prevent their yards from falling down when the ropes that support them are injured.

D

QUARTER-

QUARTER-CLOTH. Canvas nailed with fennit along the rough-tree rail on the quarter-deck, and to the plank-sheer, to keep out the spray of the sea.

RACK. A short thin plank, with holes made through it, containing a number of belaying-pins, used instead of cleats: it is seized to the shrouds, and nailed over the bowsprit or windlafs.

RACK. A long shell, containing a number of sheaves, formerly fixed over the bowsprit to lead in the running rigging; at present, wooden saddles, with holes in them, are nailed on the bowsprit for this purpose, being more out of the way, and less liable to be out of order.

RACKING A TACKLE. Fastening together the fall of a tackle, or any two ropes, by passing two or more cross turns with rope-yarn round each part, and as many round turns above them; making fast the ends with a reef-knot.

RANGE-CLEATS. Large cleats, with two arms, bolted in the waist of ships, to belay the tacks and sheets to.

RATLINGS. Small ropes which cross the shrouds horizontally, at equal distances from the deck upwards, forming ladders to go up or down from the mast-heads.

REEF. That portion of a sail contained between the head or foot, and a row of eyelet-holes parallel thereto, which portion is taken up to reduce the surface of the sail when the wind increases. Sails, according to their sizes, have from one to four reefs. A **BAG-REEF** is the fourth, or lower, reef of a topsail. A **BALANCE-REEF** crosses boom-mainsails diagonally, from the nock to the end of the upper reef-band on the after-leech.

REEF-TACKLE. See **TACKLE**.

REEF-TACKLE PENDENTS. See **PENDENTS**.

To REEVE. To pass a rope through a block or hole.

RELIEVING-TACKLES. See **TACKLES**.

RIBS OF A PARRAL. Short flat pieces of wood, having a hole near each end, through which the parral-rope is reeved.

RIDING-BITT. See **BITTS**.

RIDGE-TACKLE. See **TACKLE**.

RIGGING HOUSE, OR LOFT. A place on shore in which much of the rigging is prepared for fitting on-board; at the upper

upper end of it is a windlass; and, at certain distances down the middle, are two rows of large strong posts, for stretching ropes and laying on service; on each side of the house are births for the men to prepare small rigging in. Such of the rigging as is here prepared is fully explained in Part II. but, as that is dispersed in alphabetical order, it may be convenient, perhaps, to present, at one view, a list of those articles which are thus previously prepared on shore. They consist of the following, viz.

BACKSTAYS; standing backstays for top-masts and topgallant-masts: — **BECKETS:** — **BOBSTAYS:** — **BREAST-BACKSTAY RUNNERS:** — **BUOY-HOOPS:** — **BUOY-ROPES:** — **BUOY-SLINGS:** — **CATHARPIN-LEGS:** — **COLLARS** for the bobstays, bowsprit-shrouds, fore-stay, fore preventer-stay, main-stay, main preventer-stay, topmast-stays, and topmast preventer-stays: — **DAVIT-GUYS:** — **FORE-TACK:** — **FUTTOCK-STAVES:** — **HORSES** for the jib-boom and lower-yards: — **MAIN-TACK:** — **PARRAL-ROPES:** — **PENDENTS;** bill-pendent, brace-pendents, fish-tackle pendent, fore-tackle pendants, guy-pendents, mainstay-tackle pendants, main-tackle pendants, mizen-burton pendants, preventer-brace pendants, quarter-tackle pendent, reef-tackle pendants, rudder-pendents, topmast-burton pendants, top-rope pendants, truss-pendents, vang-pendents, winding-tackle pendent, and yard-tackle pendants; — **PUDDENING OF ANCHORS:** — **RUNNERS OF TACKLES:** — **SHROUDS;** bowsprit-shrouds, futtock-shrouds, the lower, topmast, and topgallant, shrouds: — **SLINGS;** butt and hoghead slings, can-hook slings, gun and nut slings: — **SPANS** about the masts, and long-and-short spans: — **STANDING-LIFTS:** — **STAYS** for the lower-masts, topmasts, and topgallant-masts: — **STOPPERS;** deck and bitt stoppers: — **STAPPING OF BLOCKS:** — **SWIFTERS:** — **TYES** for the lower yards, and single ties for the topsail-yards: — **WOOLDING** the masts.

RING-TAIL BOOM. See **BOOM.**

RING-ROPE. See **ROPES.**

RING-BOLT. An iron bolt, with a ring fitted in an eye in the end.

ROLLING-TACKLE. See **TACKLE.**

ROPE-BANDS. Braided cordage, used to fasten the heads of sails to their respective yards.

ROPES. All cordage in general above one inch in circumference, which bear different names, according to their various uses. **BELL-ROPE** is hawser-laid rope, nine or twelve feet in length, which bends round a thimble in the eye of the bell-strap or crank. In the middle of the rope is a diamond knot, and at the end a double wall knot, crowned. **BOLT-ROPE** is the rope sewed to the skirts, or edges, of sails. **BUOY-ROPE**, a rope fastened to the buoy of the anchor. **BREAST-ROPE** is fastened along the laniards of the shrouds, for safety, when heaving the lead in the chains. **DAVIT-ROPE**, the lashing which secures the davit to the shrouds, when out of use. **ENTERING-ROPES** hang from the upper part of the stantions, along-side the ladder, at the gangways. **GUEST-ROPE** is fastened to an eye-bolt in the ship's side, and to the outer end of a boom projecting from the ship's side, by guys, to keep the boats clear off the sides. **HEEL-ROPE** is to haul out the bowsprits of cutters, &c. **MAN-ROPES** are for the security of the men, when going out on the bowsprit. **PARRAL-ROPES** are to connect the ribs and trucks of parrals together. **PASSING-ROPES** lead round the ship, through eyes in the quarter, waist, gangway, and forecastle, stantions, forward to the knight-heads. **RING-ROPES** are occasionally made fast to the ring-bolts in the deck, and, by cross turns round the cable, to confine it securely in stormy weather. **SLIP-ROPE** is to trice the bight of the cable into the head; and is also employed in casting off a vessel, till got in a tide's way, &c. **FILLER-ROPE** is the rope by which the tiller is worked. **TOP-ROPE** is a rope reeved through the heel of a topmast, to raise it by its tackle to the mast-head.

ROPE-YARN. One of the threads of which a rope is composed.

ROUGH-TREE RAIL. A rail, breast high, along the sides of the poop and quarter-deck.

ROUNDING. Serving the cable with worn rope, or fennit, to secure it from chafing.

ROWSING. Pulling upon a cable or rope, without the assistance of capsterns, &c.

ROYAL-

ROYAL-STAY. See **STAY**.

ROYAL-YARD. See **YARD**.

RUDDER-COATS. Coverings made of well-tarred canvas, to prevent the water from coming in at the rudder-hole.

RUDDER-TACKLE. See **TACKLE**.

RUDDER-PENDENTS. See **PENDENTS**.

RUNNER. A single rope, connected with a tackle, which transmits its effort the same as if the tackle was the whole length; such are the **BREAST-BACKSTAY RUNNER**, **RUNNERS OF TACKLES**, &c.

RUNNING-RIGGING. All that part of rigging which traverses through blocks, &c.

SADDLES FOR BOOMS. Small blocks of wood, hollowed on their lower and upper sides, and nailed on the yards and bowsprits, for retaining booms in a steady position. The lower side is hollowed, to fix the convexity of the yard it is intended for; and the upper side to the figure of the boom, as a channel for it to slide on. **SADDLES**, on the bowsprit, for leading the rigging through, are semi-circles, made to fit the convex surface of the bowsprit; they are rounded on the back, and have several holes made in the sides, through which the rigging is led, when they are nailed to the inner part of the bowsprit.

SEIZING. Joining two ropes, or the two ends of one rope, together, &c. by taking several close turns of small rope, line, or spunyarn, round them. **END-SEIZING** is a round seizing on the end of a rope. **THROAT-SEIZING** is the first seizing clapt on where a rope or ropes cross each other. **MIDDLE-SEIZING** is a seizing between a throat and end-seizing. **EYE-SEIZING** is a round seizing next the eye of a shroud, &c.

SELVAGEE. Several rope-yarns turned into a circular form, and marled together with spunyarn. It is used to attach the hook of a tackle to any rope, shroud, or stay, to extend, or set them up, not being so likely to slip as rope: two or more turns of the selvagee are taken round the same, in which the hook is fixed.

SENNIT. Braided cordage, formed of rope-yarn.

SERVING. Encircling a rope with line or spunyarn, &c. to preserve it from being chafed.

SERVING-

SERVING-MALLET. A cylindrical piece of wood, with a handle in the middle: it is used for serving, and has a groove along the surface opposite to the handle, which fits the convexity of the rope to be served.

SETTING THE SAILS. Loosening and expanding them.

SETTING-UP. Encreasing the tension of the shrouds, stays, and backstays, to secure the masts by tackles, laniards, &c.

SHACKLE. A sort of iron ring, to hook a tackle to.

SHANK-PAINTER. A short rope and chain bolted to the ship's sides, above the fore channels, to hang or secure the shank of an anchor to; the flukes resting in a chock on the gunwale.

SHEEP-SHANK. A sort of knot made on backstays, &c. to shorten them.

SHEERS are used for masting vessels in the merchant-service, and sometimes in the royal navy, in places where there is no sheer-hulk. They are composed of two hand-masts, or large spars, erected on the vessel whose masts are to be fixed or displaced: the lower ends or heels rest on opposite sides of the deck, upon thick planks, sufficiently long to extend over two or three beams, shored underneath. The two hand-masts cross each other at the upper end, and are securely lashed. A tackle is lashed in the centre, and hangs perpendicularly over the station where the mast is to be fixed. The sheers are secured by guys, or stays, of proportionable rope, extending fore-and-aft to the opposite extremities of the vessel. Pl. I. fig. 33.

SHEET. A rope or tackle fastened to the clues of sails, to retain them in any direction.

SHEET-STOPPERS. See **STOPPER.**

SHIFTING-BACKSTAY TACKLE. See **TACKLE.**

SHROUDS. A range of large ropes, extended from the mast-heads to the larboard and starboard sides of the vessel, to support the masts, &c.

The shrouds are denominated from the places to which they belong; thus: the fore, main, and mizen, shrouds; fore, main, and mizen, topmast shrouds, &c.

BOWSPRIT-SHROUDS are those which support the bowsprit. **BUMKIN-SHROUDS** are those which support the bumkins. **FUT-**

TOCK-

STOCK-SHROUDS are shrouds which connect the efforts of the topmast-shrouds to the lower-shrouds. **BENTINCK-SHROUDS** are additional shrouds, to support the masts in heavy gales. **PREVENTER-SHROUDS** are similar to bentinck-shrouds, and are used in bad weather to ease the lower rigging.

SHROUD-TRUCKS. See **TRUCKS**.

SHROUD-STOPPERS. See **STOPPERS**.

SLINGS. Short ropes, used to hang the yards to the masts, &c. or to encircle a bale or cask, and suspend it whilst hoisting or lowering; and also to secure buoys, &c.

To SLUE. To turn a mast, or boom, about in its cap, or boom-iron, &c.

STAKING. A sort of fastening to confine the outer turns of seizings, &c.

STAKING THE STAYS, or ropes, on the quarters, Pl. III. fig. 23. instead of netting, is seizing proportioned sized rope, at angles, from one stay or rope to the other, alternately, in a parallel direction along the whole length. Its use to stays is, that one part may remain perfect and independent of the other should it be shot away.

STOTTER. A short rope, spliced together at the ends, and served with spunyarn, or covered with hide: it is seized to the size of the mast, leaving a bight to fit the lower end of a sprit, which it confines to the mast.

SPANS. Short ropes, having a block, thimble, or eye, spliced into each end; the middle is hitched round a mast, yard, gaff, cap, or stay, whence the ends branch out. Spans are sometimes fastened at both ends, and have a block in the bight. They are used to lead ropes through, which pass through the blocks or thimbles, to encrease power, or to prevent their swinging about.

SPANNING OF BOOMS. Confining them by ropes.

SPANNING OF RUNNERS. Taking several turns with small ropes round both runners abaft the mast, and frapping the turns.

SPANISH WINDLASS. See **WINDLASS**.

SPARS. Small fir-trees.

SPILLING-LINES. See **LINES**.

SPLICING.

SPLICING. Joining one rope to another, by interweaving their ends, or uniting the end of a rope into another part of it. There are different sorts of splices, viz. the **CUNT-SPLICE**, which forms an eye in the middle of a rope: the **EYE-SPLICE** forms an eye or circle at the end of a rope on itself, or round a block, &c. The **LONG-SPLICE** is made to rejoin a rope or ropes intended to reeve through a block, without encreasing its size: the **SHORT-SPLICE** is made by untwisting the ends of a rope, or of two ropes, and placing the strands of one between those of the other. The **TAPERED-SPLICE** is chiefly used on cables, and is made as the short-splice, but is gradually tapered toward each end, by cutting away some of the rope-yarns, and is served over: the **DRAWING-SPLICE** is a splice used for joining cables together, and is esteemed the best for this purpose, as it may be readily undone.

SPRIT. A small yard, or pole, by which spritsails are extended. The foot of it is fixed in a snotter, which encircles the mast, and it crosses the sail diagonally, the upper end being attached to the peak.

SPUNYARN. Two or more rope-yarns twisted together.

SQUARE-RIGGED. A term applied to those ships which have long yards, at right angles with the length of the keel and low masts: it is thence used in contra-distinction to those vessels whose sails are extended by stays, latteen-yards, &c.

SQUARE-SAIL BOOM. See Boom.

STAFF. A light pole on which the flags are hoisted. The **ENSIGN-STAFF** is the principal staff, and is erected on the stern, within-side the taffarel, to display the ensign. **FLAG-STAFFS** are also erected on the mast-heads, or formed by the upper part of the topgallant masts, to hoist the flags, royals, &c. The **JACK-STAFF** is a short staff, erected on the aftside of the bowsprit-cap, to expand the jack.

STAGE. A small platform made of grating, or of short boards, for men to stand upon to fix the rigging toward the outer end of the bowsprit, &c.

STANDING-PART. That part of a tackle which is made fast.

STANDING-

STANDING-PART OF A ROPE, (in the making of knots, &c.) means the principal part of a rope, in contra-distinction to the end by which the knot is formed; or it may be said to be that part of a rope which is at rest, and is acted upon by the end.

STANTIONS OF THE NETTINGS. Square wooden pillars, let into the upper part of the ship's side, or small pillars of iron, used to support the nettings, awnings, &c.

STAYS. Strong ropes, to support the masts forward, which extend from their upper part, at the mast-head, toward the fore part of the ship. The stays are denominated, from the masts, **LOWER-STAYS**, **TOPMAST-STAYS**, **TOPGALLANT-STAYS**, **FLAGSTAFF** or **ROYAL STAYS**, &c.

BACKSTAYS (**BREAST**, **SHIFTING**, and **STANDING**) are stays which support the topmasts and topgallant-masts from aft; they reach from the heads of the topmast and topgallant-mast to the channel on each side of the ship, and assist the shrouds when strained by a press of sail. The shifting backstays change according to the action of the wind upon the sails, whether aft or upon the quarter. **BOBSTAYS** are stays used to confine the bowsprit down upon the stem, and counteract the force of the stays which draw it upwards. **STAYSAIL-STAYS** are those stays on which the staysails are extended. The **JIB-STAY** is similar to the staysail-stays, and extends the jib. The **MARTINGAL-STAY** supports the jib-boom, as the bobstays support the bowsprit. **PREVENTER** or **SPRING STAYS** are subordinate stays to support their respective stays, and supply their places in case of any accident. **SKIATIC-STAYS** are ropes used for hoisting or lowering burdens in or out of ships.

STAYSAIL-STAY TACKLE. See **TACKLE**.

STAY-TACKLE PENDENTS. See **PENDENTS**.

STERNFAST. A rope to confine the sterns of boats, &c.

STIRRUPS. Short ropes, which have their upper ends plaited and nailed round the yards: eyes are made in their lower ends, through which the horses are reeved, to keep them parallel to the yards.

STOOLS. Small channels, fixed to the ship's sides, to contain the dead-eyes for the backstays.

E

STOP.

STOP. Several turns of spunyarn taken round the end of a rope, similar to a seizing, to fasten it to another rope. Also, a projection left on the upper part of topgallant-masts, &c. to prevent the rigging from sliding down.

STOPPERS. Short ropes, used to check the cable, suspend weighty bodies, and retain the shrouds, &c. in a fixed position, after being damaged, or otherwise. **ANCHOR-STOPPERS** are used to suspend the anchor, when catted. **BITT-STOPPERS** are those stoppers used to check the cable. **DECK-STOPPERS** are used to retain the cable when the ship is riding at anchor. **DOG-STOPPERS** are used either as additional securities when the ship is riding in heavy gales, or for bringing up a ship with much sternway, to prevent the cable from snapping at the bitts, and to ease the deck-stoppers. **WING-STOPPERS** are used for the same purposes as dog-stoppers. **SHROUD-STOPPERS** are used to confine a shroud together, when damaged or shot. **FORE-TACK** and **SHEET STOPPERS** are for securing the tacks and sheets, till belayed.

STRAPS. Wreaths of rope spliced round blocks, or encircling a yard or any large rope, by which tackles, &c. may be connected to them.

STUDDINGSAIL-BOOM. See **BOOM**.

STUDDINGSAIL-YARDS. See **YARDS**.

To SURGE. Gently to slack a cable or rope, so that it may slide up the capstern, round which it is turned.

SWAGGING-OFF. Pulling upon the middle of a tight rope that is made fast at both ends.

To SWAY. To haul upon a rope or cable.

SWIFTERS. The after-shrouds on each side of the main and fore masts: they are above all the other shrouds, and are used as an additional security to the masts. **SWIFTER** is also a small rope used to confine the bars of a capstern in their holes, while the men are heaving it about. It is likewise a large rope, sometimes used lengthways round a boat under the gunwale, to strengthen it, and defend it from other boats which may strike against it.

SWIFTERING OF SHROUDS. Stretching of them by tackles, to prevent any future extension.

TACKS.

TACKS. Ropes used to confine the foremost lower corners of courses, and of stayfails, and other fore-and-aft fails; also the rope employed to haul out the lower corners of studdingfails. **TACK** is also applied to that part of a fail to which the tack is fastened.

TACK OF A FLAG. A line spliced into the eye at the bottom of the tabling, for securing the flag to the haliard.

TACK-STOPPER. See **STOPPER**.

TACKLE. A machine formed by the connection of a rope or fall, with an assemblage of blocks. See more particularly, in the second Part, under the word **TACKLE**.

TACKLE-FALL. That end of the rope of a tackle which is bowfed on, or the rope which composes the tackle.

TACKLE-PENDENTS. See **PENDENTS**.

TAIL. The long end of a block-strap, by which the block is attached to any place required.

TARPAWLING. Canvas paid over with tar, and used to cover the hatches, to prevent water from coming in; and to cover the blocks at the sheer-heads of hulks, &c.

THIMBLES. A kind of iron rings, whose outsides are grooved, to receive ropes of different sizes. Pl. III. fig. 45. They are fixed to the rigging for blocks to be hooked to, and for ropes to reeve through, &c.

THROAT. The inner end of a gaff, or boom.

TILLAR-ROPE. See **ROPE**.

THRUMMING. Interplacing, in a regular manner, through intervals of matting, made by a fid, short pieces of thrums or rope-yarn.

TIMENOGUY. A rope fastened at one end to the fore-shrouds, and nailed at the other end to the anchor-stock, on the bow, to prevent the fore-sheet from entangling.

TONGUE. A short piece of rope spliced into the upper part of standing-backstays, &c. to the size of the topmast-heads: it is served over with spunyarn, and is used to keep them open to the size of the mast-heads.

TOP. A platform, surrounding the lower mast-heads, to extend the topmast-shrouds, &c.

TOP-ROPE. See **ROPE**.

TOP-ROPE PENDENTS. See **PENDENTS.**

TOP-TACKLE. See **TACKLE.**

TOPMAST-STAY TACKLE. See **TACKLE.**

TOPPING. The act of drawing one of the yard-arms higher than the other, by slackening one lift, and pulling upon the other.

TOPPING-LIFT. A tackle to suspend, or **TOP**, the outer end of a gaff, boom, &c.

TOPSAIL-YARDS. See **YARDS.**

TOPGALLANT-YARDS. See **YARDS.**

TOP-NETTING. See **NETTING.**

TRAVELLER. A large iron thimble, whose diameter is larger than the common thimbles, though the surface is smaller. Pl. III. fig. 20. **TRAVELLERS** are used to facilitate the descent of topgallant-yards by the back-stays, they being placed on the back-stays, and surrounded by a short rope, or tail, which is fastened round the yard-arms. The **JIB-TRAVELLER** is a circular iron hoop, with a hook or shackle, used to haul out the tack of the jib.

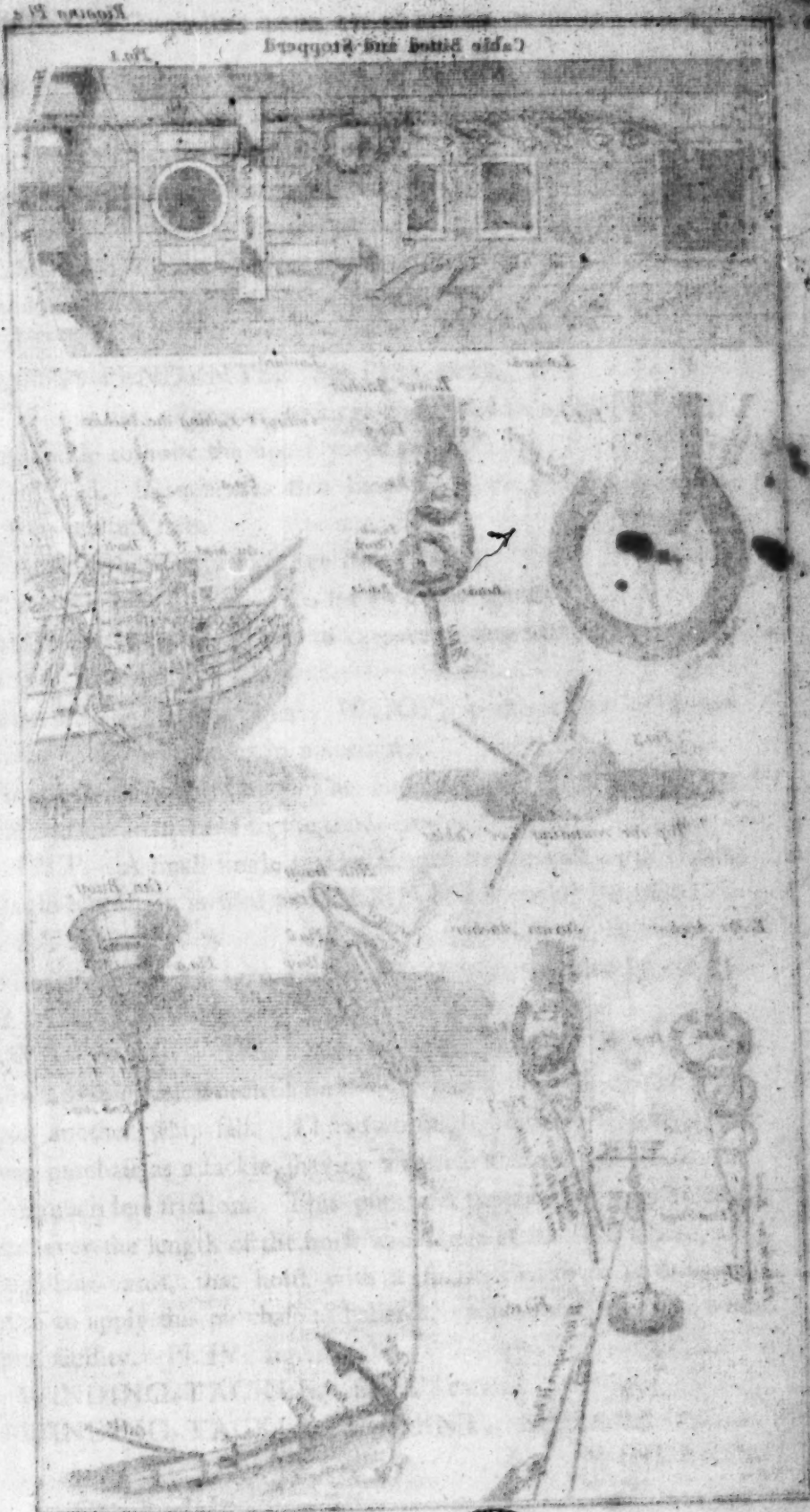
TRAVERSE-HORSES. See **HORSES.**

TREE-NAILS. Round wooden pins, used by riggers for levers, or heavers; also the wooden pins by which the ship's planks are fastened to the timbers.

TRESTLE-TREES. Two strong bars of oak, bolted to the 'thwartship sides of the lower mast-heads, to support the top and weight of the topmast; and to the topmast-heads, to support the topgallant-masts, &c.

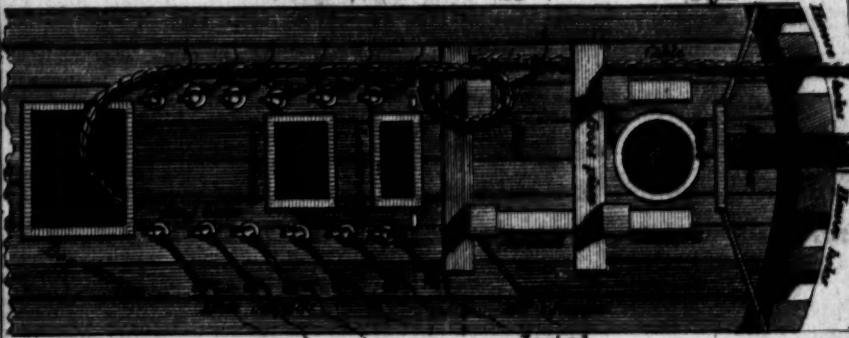
TRICING-LINE. See **LINE.**

TRUCKS. Small pieces of wood, of various shapes, used for different purposes. **FLAG-STAFF TRUCKS** are round flat pieces of elm, with a small sheave on each side. They are fixed, by a square mortise-hole made in the middle, upon the upper end of flag-staffs, and are used to reeve the haliards. **PARRAL-TRUCKS** are round balls of elm, or other wood, and have a hole through the middle, in which a rope is reeved to form the parrals. **SEIZING-TRUCKS** are similar to parral-trucks, but have a score round the middle to admit a seizing. They are used to lead ropes through. **SHROUD-TRUCKS** are short cylindrical pieces of elm, &c. Pl. III. fig.

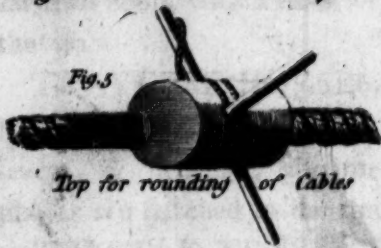
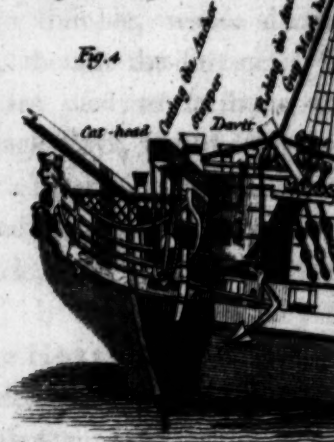


Cable Bitted and Stopperd

Fig. 1



Cutting & Fishing the Anchor



Kedge Anchor



Stream Anchor



Nun Buoy



Can Buoy



fig. 35 and 37. They have a hole through the middle, lengthways, a groove down the side, the size of the shrouds, and a score round the middle to admit a seizing. They are seized to the shrouds, to lead ropes through, that they may be more readily found.

TRUSS. A rope employed to confine or slacken the lower-yards to or from their respective masts.

TRUSS-TACKLE. See **TACKLE**.

TRUSS-PENDENTS. See **PENDENTS**.

TIE. A sort of runner, or large rope, used to convey the effort of the tackle to hoist the upper yards and gaff.

VANGS. The braces that keep steady the peek of gaff-fails and fore-and-aft fails.

VANG-PENDENT. See **PENDENTS**.

To VEER-AWAY. To let go a rope gently.

WARP. A hawser, used to remove a ship from one place to another.

WARP, or more properly **WOOF**, is the twine or thread woven across the knittles in pointing.

WARP OF SHROUDS. The length of the shrouds from the bolster at the mast-head to the dead-eyes.

WHIP. A small single tackle, formed by connecting the fall to a single block: it is used to hoist light bodies out of the hold, &c. Pl. IV. fig. 10.

To WHIP. To turn a piece of pack-thread, &c. upon the end of a rope, to prevent its unravelling.

WHIP-UPON-WHIP. The greatest purchase that can be gained by blocks, which is formed by fixing the end of one whip upon another whip-fall. Thus two single blocks will afford the same purchase as a tackle, having a double and a single block, and with much less friction. This purchase should therefore be used whenever the length of the hoist will admit of it. To topfail, and topgallant-yards, that hoist with a single tie, there is sufficient room to apply this purchase as haliards, which will overhaul with great facility. Pl. IV. fig. 10.

WINDING-TACKLE. See **TACKLE**.

WINDING-TACKLE PENDENT. See **PENDENT**.

WINDLASS.

WINDLASS. A machine, used in most merchant-ships, to answer the purpose of a capstern. A **SPANISH WINDLASS** is formed of an iron-bolt, placed in a hole, which is hove round by a woolder that acts as a lever for turning it round. It is used to stretch small rigging for serving, &c. &c. Pl. III. fig. 30.

WOOLDING. Winding several close turns of rope in a tight manner round masts and yards, that are made of several united pieces, to strengthen and confine the same together.

WORMING. Winding a rope close along the cunt-lines, to strengthen it, and make a fair surface for service.

YARDS. Long cylindrical pieces of fir timber hung to the masts of ships, to expand the sails to the wind. The **LOWER-YARDS**, to which the courses are bent, are the largest; such are the main, fore, mizen, and spritsail, yards, which, except the mizen, hang to the masts at right angles with the ship's length. The **MIZEN-YARD** hangs obliquely to the mizen-mast, parallel to the ship's length. The **TOPSAIL-YARDS**, which expand the topsails, hang to the topmasts, next above the lower-yards. The **SPRITSAIL-TOPSAIL YARD** hangs beneath, and near the outer end of the jib-boom. The **TOPGALLANT-YARDS**, which expand the topgallant-sails, hang above the topsail-yards; and the **ROYAL-YARDS**, which expand the royal-sails, are hung above the topgallant-yards. The **CROSS-JACK YARD** is used to expand the foot of the mizen-top-sail; and the topsail, or square sail, of vessels, with one mast. The **DRIVER-YARD** is a small yard, which expands the head of the driver without the peek of the gaff, to which it is hoisted by haliards. **STUDDING-SAIL YARDS** hang to the extremities of the yards, and by these are expanded the heads of the studding-sails.

YARD-TACKLE. See **TACKLE**.

YARD-HORSES. See **HORSES**.

RIGGING.

RIGGING.

PART II.

MUCH of the rigging of all ships is previously prepared on shore in a house or loft; and, before a person can possibly arrive to the knowledge of fitting rigging on board, he must not only be acquainted with all that is thus prepared on shore, but also must he know how to perform the various other operations incidental to rigging. Such PREPARATORY KNOWLEDGE, therefore, may be gained by a perusal of this second Part, alphabetically arranged.

AWNINGS. The ridge-rope of the poop-awning reeves through the trucks, served along the midships of the awning; the standing-part makes fast with a clinch round the ensign-staff, the leading-part round a roller fixed in the aftside of an iron clasp-hoop on the mizen-mast, and sets up, by a fall, which connects a double-block, turned into its end, to a single-block lashed to an eye-bolt in the deck. The side ropes reeve through trucks, served alongside the awning, with an eye spliced into the end of the standing part, through which it is seized with spunyarn to the fore leg of the mizen-shrouds on each side. The leading-part reeves through a sheave-hole in the upper part of a wooden stantion, fixed

fixed against the stern on each side, and sets up with a small tackle.

The ridge-rope of the quarter-deck awning reeves through the trucks in the middle of the awning, and clinches through an eye in the fore side of the clasp-hoop on the mizen-mast; and the leading-part reeves round a roller, fixed in the aftside of an iron clasp-hoop on the main-mast, and sets up as the poop-awning. The side ropes reeve through trucks along the sides of the awning, and seize to the foremost leg of the main-shrouds; the leading-part reeves through a block, seized to the foremost leg of the mizen-shrouds, and sets up as the ridge-rope.

The ridge-rope of the main-deck awning reeves through the trucks in the middle, and clinches through an eye in the clasp-hoop on the main-mast; and the leading-part reeves round a roller, fixed in the aftside of an iron clasp-hoop on the fore-mast, and sets up as the poop-awning. The side-ropes reeve through the trucks, and are seized to the foremost leg of the fore-shrouds; the leading-part reeves through a block, seized to the foremost leg of the main-shrouds; and sets up as the quarter-deck awning.

The awnings are spread and suspended by the middle thus: In the after-ends three thimbles are seized, one in the middle, and one on each side, that go over hooks, seized to the hoop on the mast and shrouds at the sides. The fore part is hauled forward, stopt to the shrouds, and laced across through eyelet-holes, made at the edges of each awning. In harbour, the awnings spread to wooden stantions, bolted along the sides; and, the hands being few, they are hauled forward by tricing-lines, reeved through single blocks, seized to uprights instead of the masts. In the middle of the awnings, the legs of the crowfoot reeve through the holes in the euphroe, and make fast to the strands of the ridge-rope, at equal distances; and that is suspended by the haliard that is spliced round the euphroe, and reeves through a single block seized to the stay.

BALE-SLINGS. See GUN and NUT SLINGS.

BECKETS. Some have an eye spliced in one end, and a small walnut-knot crowned at the other: and some have both ends

ends spliced together like a wreath. **BECKETS**, for the lifts prepared on shore, are whipt at each end.

TO BELAY. To fasten a rope, by giving it several cross turns alternately round two timber-heads, each end of a cleat, belaying-pin, &c. **Pl. I. fig. 31.**

BENDS. COMMON BEND. **Pl. I. fig. 5.** Pass the end of a rope through the bight of another rope, then round and underneath the standing-part; but, to prevent its jamming, pass it round again under the standing-part. The sheet of a sail has the end passed up through the clue, then round the clue, and underneath the standing-part. The rope of a buoy is passed as a sheet, and has the end stop.

Bends of a cable-clinch are passed as a seizing. **CARRICK-BEND.** **Pl. I. fig. 1.** Lay the end of a rope, or hawser, across its standing-part; then take the end of another rope, or hawser, and lay it under the first standing-part, at the cross, and over the end; then through the bight, under the standing-part; then over its own standing-part, and underneath the bight again: it is often used in haste, to form a greater length, to warp or tow with. **FISHERMAN'S BEND.** **Pl. I. fig. 2. and Pl. IV. fig. 6.**

Take a round turn with the end of a rope, or hawser, through the ring of an anchor, &c. and a half-hitch through both parts, and another half-hitch round the standing-part; then stop the end.

HAWSER-BEND, **Pl. I. fig. 3,** is a hitch, with a throat and end seizing made on one end, and the end of another hawser reeved through the bight, and hitched with a throat and end seizing.

TEMPORARY BEND, **Pl. I. fig. 4.** commonly made to reeve through large blocks, thus: Lay three fathoms of the end of two hawsers together, and put on a round seizing in the middle; then reverse the ends to each standing-part, and put on a throat-seizing between each end and the middle, and a round seizing on each end.

BENTINCK-SHROUDS have four or six short legs, with an eye spliced in the end of each, which seizes round the futtock staff and shrouds, close up to the catharpins. The bights of those legs are parcelled and served together, and a large thimble seized therein; in which is turned-in another large thimble. The bight of the bentinck-shrouds is parcelled, and served in the way of this

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thimble,

thimble, round which they are seized with a round seizing. A thimble, or dead-eye, is turned into the lower ends, which sets up with a laniard to a spare dead-eye, or eye-bolt, in the chains, on the opposite sides.

BOATS' ROPES. Necessary ropes belonging to these are: The **PAINTER**, which splices round a thimble in the ring-bolt within the bow. The **STERNFAST** splices round a thimble in the ring-bolt within the stern. **FENDERS** are made of worn cable-laid rope, doubled three or four times, and sewed together with spunyarn thus: The rope is first doubled, and a laniard thrust through the bight, and a wall-knot crowned on the ends: the ends are then brought up in the bight, and the four parts sewed together. **RUDDER-LANIARDS**, the ends are thrust through holes in the after-part of the rudder, on contrary sides; and a double wall-knot, crowned, is made at the ends; the inner ends make fast on each quarter of the boat withinside. **SLINGS** have a hook and thimble spliced in each end, with a long and short leg, by having a thimble seized in the bight at one-third the length.

BOBSTAYS are usually prepared on shore; and are wormed, parcelled, and served with spunyarn, three-fourths of the length.

BOOMKIN-SHROUDS, to support the boomkins, have their after-ends hooked to eyebolts, one above the cheeks of the head, the other in the cutwater: at the fore part, or bight, is seized in a dead-eye, or thimble, which sets up with a laniard to a dead-eye, or thimble, seized in a strap fixed round the outer end of the boomkin.

BREAST-BACKSTAY RUNNERS, prepared on shore, are doubled, and cut in the bight. They have a double block spliced in one end; are served with spunyarn over the splice; and the other end is whipped.

BREECHING. See **GUN-TACKLES.**

BUOY-HOOPS, prepared on shore, Pl. IV. fig. 8. are cut sixteen inches longer than the length in the table, page 35, to allow for splicing the ends together. In the merchant-service they are wormed and served; but not in the king's service.

Each hoop is fixed its breadth within the second iron hoop, at each end, and is reeved through the eye in the ends of the slings, before the ends are spliced together. Each sling is doubled, and

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two slings are fixed at each end of the buoy. The eyes of the slings, at one end, lead down through the upper hoop, and reeve on the lower hoop; and the eyes of the slings, at the other end, lead up under the lower hoop, and reeve on the upper hoop, between the upper slings.

The hoops are drawn asunder, sufficiently to force the buoy between them; are then put over the ends of the buoy, and the slings and hoops got into their places, as near as possible. The slings are placed on the quarters, equally between each other; and the bights fixed in scores, in the ends of the buoy. It is next got upon the stretch: one end of the slings is made fast to a post, and the other end to a tackle, whose fall is swayed tight, or hove so by a heaver. When the buoy is thus set tight, the hoops are driven by a mallet into their places; and the bight of the slings is seized well together, with a thimble in one end and an eye at the other. Large buoys have seven under and six riding turns; smaller buoys six under and five riding turns; the end of the seizing crossed each way, and the end knotted and crowned. A fid is driven in the eye, to make it round, then driven out, and the two bights marled together.

Another thimble is turned into the thimble in the other end, for bending the buoy-rope to.

BUOY-SLINGS, prepared on shore, Pl. IV. fig. 8 and 9, are cut to the first length in the following table; and have an eye spliced in each end, large enough to reeve the same sized rope; they are then got on the stretch, and hove out to the next length; then wormed, and served with spunyarn from eye to eye.

DIMENSIONS OF BUOY-SLINGS AND HOOPS.								
Merchant-Ships.	RATE.	Number of Guns.	Size of the Buoy.	SLINGS.		Length of the Hoop.	No. of Slings.	No. of Hoops.
				Length cut out.	Length hove out.			
			Ft. In.	Ft. In.	Ft. In.	Ft. In.		
	First	110 & 100	4 8	12 9	10 10	5 10		
	Second	98 & 90	4 7	11 11	10 8	5 9		
	Third	80, 74, & 64	4 6	11 8	10 6	5 8		
East-India ships.	Fourth	60 & 50	4 2	10 10	9 8	5 0	4	2
	Fifth	44 to 32	3 10	10 2	8 11	4 4		
West-India ships.	Sixth	28 & 24	3 6	9 2	8 2	3 10		
	Sloops	16 & 14	2 10	7 10	6 8	3 5		
Merchant-Vessels 200 tons & under.	Cutters		2 6	7 0	6 2	3 3		
	Brigs		2 3	6 6	5 8	3 0		

BUTT AND HOGSHEAD SLINGS, prepared on shore. Each pair has a thimble spliced in one end, which is served with spunyarn over the splice; the other end is whipt. Pl. III. fig. 33 and 47.

CAN-HOOK SLINGS, prepared on shore. A flat broad iron-hook, with an eye in one end, is spliced through the eye in each end of the slings, and sometimes with a thimble seized in the bight. Pl. III. fig. 41.

To **CAP** a rope. Cover the end with tarred canvas, and whip it with twine or spunyarn.

CATFALL reeves through the sheaves at the outer end of the cat-head, and through the sheaves of the cat-block alternately.

CATHARPIN-LEGS, prepared on shore, are four in number. The foremost is the shortest, and they increase one inch in length as they go aft. The length of the foremost one is from four feet, in small, to eight feet, in large, ships. They have an eye spliced in each end for lashing; are then wormed, parcelled, and served with spunyarn from eye to eye.

CATSPAW, for hooking up shrouds, &c. Pl. I. fig. 6. Lay the end of a rope, or fall, over the standing-part and middle of the bight, then turn it three times over both parts, and hook the tackle through both bights.

CLINCHES. **INSIDE CLINCH**. Pl. IV. fig. 2. The end of a cable is passed through the hawse-hole, and reeved through the ring of the anchor; then passed round the standing-part, through the bight, and a circle, which is called the clinch, formed, of the same size as the ring of the anchor: a throat and end bend is then clapped on opposite each other, and a seizing of spunyarn close to the end. All other inside clinches are stopped, similar to the bends of this clinch, with small rope, or spunyarn. **OUTSIDE CLINCH**, Pl. I. fig. 7. only differs from an inside clinch, by passing the end on the outside, and not through the bight, for the more readily casting it off.

CLOTHING THE BOLSTERS. Lay several thicknesses of worn canvas, well tarred, over them, to make an easy bed for the shrouds.

COLLARS,

COLLARS, prepared on shore. **FORE-STAY COLLARS** are fitted to the circumference of the bowsprit, and spliced together at the ends; wormed, parcelled, and served the whole length; then doubled, and a heart seized in the bight. The splice is to lie on the back of the heart with quarter-seizings, a score being cut, on each side of the heart, large enough to admit from nine to twelve turns of seizing: the seizing is to be snaked on the back, to lie closely.

MAIN-STAY COLLAR is made by the rope-makers, with an eye in one end; is wormed, parcelled, and served round the eye, and the whole length.

FORE and MAIN PREVENTER-STAY COLLARS. The fore preventer-stay collar is fitted to the circumference of the bowsprit. The main preventer-stay collar is fitted either to the foremast or bowsprit, according to which it is set up to. They have an eye spliced in each end for lashing; then wormed, parcelled, and served with spunyarn from eye to eye; and a heart seized in the bight, as in the fore-stay collar.

BOWSPRIT-SHROUD COLLAR and BOB-STAY COLLARS are fitted to the circumference of the bowsprit: they have an eye spliced in each end; are then wormed, parcelled, and served from eye to eye; and a heart seized in the bight, with a long and short leg, with seven under and six riding turns, well strained, and crossed with two turns: the end whipt, and secured with a wall-knot crowned.

TOPMAST-STAY and PREVENTER-STAY COLLARS have an eye spliced in one end, are wormed and served with spunyarn, and have a single block seized in the bight. The **FORE-TOPMAST-STAY COLLAR** is seldom used; but it is prepared in case the bees of the bowsprit should be carried away. Ships, however, that have no bees to the bowsprit, make use of this collar.

CROWNING, OR FINISHING A WALL-KNOT. Pl. I. fig. 40. Lay the first strand over the walling, and the second strand across over the first, and the third strand across over the second, and through the bight of the first; then haul the ends tight.

DAVIT-GUYS, prepared on shore, have an eye spliced in one end to the circumference of the davit-head; are served with spunyarn

yarn over the splice; and whipt with spunyarn at the other end.

DERRICK. A tackle used at the outer quarter of a mizen-yard, consisting of a double and single block, connected by a fall. A *diagonal shore*, as a support to sheers, is also called a derrick; as is likewise a single spar, top-mast, or boom, raised upright, and supported by guys at the head, whence hangs a tackle over the hatchway, the heel working in a socket of wood fastened on the deck.

DOLPHINS are made of a piece of worn hawser-laid rope, nearly as long as the circumference of the mast, which has an eye spliced in each end, and is pointed over the whole length. They are occasionally lashed round the mast, through the eyes, as a support to the puddening.

FENDERS. Pieces of wood, or old cable, bags of old rope-yarn, shakings, cork, or other materials, hung by a laniard over a vessel's sides, to prevent her being damaged. Pl. III. fig. 42. — See likewise **BOATS' ROPES**.

FLAGS. Flags and pendants are hoisted by **HALIARDS**, which reeve through sheaves in the trucks at the mast-heads or small-blocks, seized where wanted. The two ends of the haliards splice together, and reach down to the tops, or down upon deck, and belay; one part of the haliards is bent to the upper part of the tabling, to the lower end, and to several places between; and, in proportion as one is hoisted upon, the other is eased away, until the flag is hoisted. The haliards are then belayed.

HALIARDS OF PENDENTS are bent to slings spliced round the stick; consequently, to haul a flag or pendent down, the part that was hauled upon must be eased.

The **ENSIGN-HALIARDS** reeve through a sheave in the truck of the ensign-staff, and belay to a cleat near the heel.

The **JACK-HALIARDS** reeve through the sheave in the truck of the jack-staff, and belay to a cleat at the heel near the bowsprit.

SIGNAL-PENDENT HALIARDS are reeved through blocks or thimbles, seized to different parts of the ship, as the cross-trees, &c.

SIGNAL-FLAGS are hoisted at the mizen-peek, &c. Night-signals are made with lanterns, and are hoisted by the same haliards as the flags.

The

The **BROAD-PENDENT** is hoisted with the shortest side next the mast.

FLEMISH EYE, OR MADE EYE. Open the end of a rope; then open the yarns, dividing them into two parts, and laying one part over the other; or place them together, one part in the other: then well marl, parcel, and serve, them together.

FOXES are two or three rope-yarns of junk, twisted together on the thigh till quite hard; then well rubbed with a hand-full of rope-yarn. Make several bights over your thumbs to twist them together.

FRAPPING, Pl. I. fig. 36, is taking several turns with the end of a lashing round the middle of it, or any number of ropes, and drawing the several parts tight together.

FRAPPING of a ship is performed by passing a number of turns of a cable over the gunwale and round the hull, and heaving it tight, by thrusting a capstan-bar through the middle of the turns, and twisting them together. The turns are then secured by stopping the end of the bar. This is mostly used when the upper works of a ship are not strong enough to resist the violent shocks of a heavy sea.

FUTTOCK-SHROUDS, prepared on shore. The length allowed is divided into four, and cut in the bights. Each length has a hook and thimble spliced into each end, and the ends of the splices stopped with spunyarn; then doubled, and a spunyarn tied in the middle for the cutting-mark. The hooks are then hooked in each other, and got upon the stretch. They should be well hove out, to try the hooks and splices, as the topmast depends very much thereon. If a hook should break, or the splices draw, the former must be shifted, and the latter hauled tighter through.

After they are sufficiently stretched, the ends of the splices are tapered, marled down, and served with spunyarn within two feet of the cutting-mark; they are cut asunder, and the ends whipt.

FUTTOCK-STAVES, prepared on shore, are wormed, parcelled, and served with spunyarn the whole length; and then cut to the lengths wanted on board.

GASKETS are made with three-yarn foxes. Pl. II. fig. 17. Those for large ships consist of nine foxes, and those for smaller of seven.

seven. Place four foxes together, but lay them of unequal lengths; mark the middle of the whole length, and plait four foxes together, for eight or nine inches; then double it, and plait the eight parts together for five inches, and work in the odd fox. The whole is then plaited together, for eighteen inches in length; then leave out one fox, and so keep lessening one fox at a time, till you come to five. If the foxes work out too fast, others must supply their places, till the whole length is worked, which is from five to seven fathoms long. To secure the ends, make a bight, by turning upwards one of the foxes, and plait the others through the bight, then haul tight upon that laid up.

GRIPES are short ropes, spliced together in the middle, with a dead-eye seized in one bight. Pl. III. fig. 46. The splice lies on the back of the dead-eye, and a hook and thimble are seized in the other bight, which hook to ring-bolts in the deck. The straps are ropes, in length once and a quarter the width of the boat, spliced together in the middle, and a dead-eye seized in each bight; they are used to secure the boats upon the deck in this manner: The straps are laid athwart the boat forward, in midships and aft, and set up with laniards through the holes in the dead-eyes of the straps, and those hooked to the ring-bolts in the deck.

GROMMETS. Worn rope spliced together in the form of a wreath, of various sizes, according to the purposes to which they are to be applied. Those for confining the nock of spritsails are served over with spunyarn, and are sometimes covered with leather.

GUN AND NUT SLINGS, prepared on shore, are spliced together with a short splice, and served with spunyarn over the splice. Pl. III. fig. 24, 32, 39, and 50.

GUN-TACKLES. Gun-tackling consists of ropes, blocks, &c. and is to run the guns in and out, and secure them to the ship's sides in bad weather. **BREECHING** is a rope to secure and prevent the gun from recoiling too much. It is formed with a cunt-splice in the middle, which passes over the pomiglion, or tascabel, of the gun, and through ring-bolts in each side of the carriage, and is clinched to large ring-bolts in the side of the ship,

ship, on each side of the port. **PREVENTER-BREECHING** is similar to the breeching, and is used for additional security. The **GUN-TACKLE** is used to run the gun out of the port, and keep it in a situation for firing. Pl. II. fig. 15. It has a single block that hooks to the eye-bolts in the sides of the carriage, and a single or double block, for 32-pounders, that hooks to other ring-bolts by the sides of the ports. **RELIEVING or TRAIN TACKLES** are to run guns in, and so retain them, by hooking the double block of the tackle to an eye-bolt in the train of the carriage, and its single block to another eye-bolt in the deck; one of which is fixed opposite to every gun. **QUOINS** (besides those used to elevate and depress the gun) are tapered pieces of wood, like wedges, that are thrust under the trucks of the carriages, and there kept, by being nailed to the deck; they are used in keeping the gun securely housed.

Guns are housed or secured, by taking out the quoins and lowering the breech, so that the muzzle may take the upper part of the port. When thus placed, the two sides of the breeching are frapped under the gun at the muzzle near the breast-part of the carriage. The muzzle of the gun is confined by several turns of a rope, or gasket, made fast to it, and the eye-bolts that are fixed in the ship's side, over the midships of the port.

The lower-deck guns are usually kept housed and secured when at sea.

HITCHES. **CLOVE-HITCH**, Pl. I. fig. 8, is two half-hitches, one at the back of the other, made by the ratlings round the shrouds, and by buoy-ropes round anchors. **BLACKWALL-HITCH**. Pl. I. fig. 9. Take the end of a rope, or fall of a tackle, round the back of a tackle-hook, and jamb it underneath the standing-part. **HALF-HITCH**. Pl. I. fig. 10. Pass the end of a rope over the standing-part, and through the bight, and lay it up to the standing-part; and repeat it for two half-hitches. **MAGNUS-HITCH**. Pl. I. fig. 14. Take two round turns through the ring of an anchor, &c. and bring the end over the standing-part, then round the ring and through the bight. **MIDSHIPMAN'S HITCH**. Pl. I. fig. 11. Take a half-hitch round the standing-part, and a round turn above the hitch, which jamps tight. It is mostly used

to make fast the sheets of sailing-boats. **RACKING-HITCH**, for shortening slings. Pl. I. fig. 12. Lay the bight over both parts, and turn it over several times; then hook the tackle through the bights. **ROLLING-HITCH**. Pl. I. fig. 13. Take two round turns round a mast, &c. and make two half-hitches on the standing-part. **TIMBER-HITCH**. Pl. I. fig. 15. Lay the end over the hauling-part, and pass it through the bight; then take several turns round the standing-part, and stop the end. The bight serves as a sling for bales, drawing of timber, &c.

HORSES for the yards, prepared on shore, have an eye spliced in one end, the circumference of the yard-arm, and served with spunyarn over the splice.

KNITTLES are two or three rope-yarns twisted hard together between the finger and thumb, with the twist of the yarn beginning the middle; the ends are whipped.

KNOTS. **BOWLINE-KNOT**. Pl. I. fig. 17. Hold the end of the rope in the right hand, and the standing-part in the left; then pass the end under the standing-part in the left hand, and over through the bight; then bring it over the standing-part, and pass it again through the bight, and haul tight. **RUNNING-BOWLINE KNOT** has the knot made on the bight, instead of the standing-part, round which it makes a bight. **BUOY-ROPE KNOT**. Pl. I. fig. 16. One end is unstranded for one yard in length, stopped with rope-yarn, and one of the nine smaller strands taken out of each of the larger strands, which are then laid together again. The three smaller strands are double-walled, right handed close to the stop, and then laid up their cunt-lines. **DIAMOND-KNOT**, single. Pl. I. fig. 18. The strands of the rope are untwisted to where the knot is designed to be made; then form bights, by laying the strands down the sides of the rope, and keep them fast: then pass the end of the first strand through the second bight, missing the first; and the end of the second strand through the third bight, round the second; and the end of the third strand round the second and third bight: then pass the end through the first bight, and haul tight. The strands are then twisted together to the next knot. **DIAMOND-KNOT**, double, Pl. I. fig. 19, is made by the several strands following their respective places through

through the bights of the single knot; and led up through the middle, and the strands twisted together to the place of the next knot. These knots are used as ornaments upon bell and side-ropes. **OVERHAND-KNOT**, Pl. I. fig. 20, is made by passing the end over the left hand, and through the bight. **REEF-KNOT**, Pl. I. fig. 25, is to attach the two ends of a rope together; and, in making, observe to pass both parts of the rope on one side, in the bight of the other, thus: Turn up one end, and form a bight, and put the other end up through the bight; take it round underneath, and pass it through the bight again. **SHROUD-KNOT**, Pl. I. fig. 22, 23, and 24. The two ends are opened about four feet, and interplaced one in the other, as for splicing: then a single wall-knot is made with the ends on each part, and the ends laid in the cunt-line, tapered, and served over with spunyarn. **SPRIT-SAIL-SHEET KNOT**. Pl. I. fig. 21. The ends of the rope are first thrust through holes, one on each side of the spritsail-sheet block; then untwisted about two feet, and the six strands walled together, and crowned at top, thus: Lay four strands over the walling, two to the right, and two to the left; the remaining two strands are woven contrarywise over and under the other strands, and hauled tight. The block is then seized in the bight. **STOPPER-KNOT**, Pl. I. fig. 37, is made the same way as a double wall-knot, and the ends put up through the heart, and whipt at top. **TACK-KNOT**, Pl. I. fig. 41, is made by untwisting the strands sufficiently, and there making a stop with rope-yarn; then single wall and crown, then double wall and double crown, and haul the ends tight, and jamb the knot: then the strands are led down through the walling, and laid down in the cunt-line; tapered, marled, and served over with spunyarn. **WALL-KNOT**, single, Pl. I. fig. 38 and 39, is made by untwisting the ends of a rope, and making a bight with the first strand; then passing the second over the end of the first, and the third strand over the end of the second, and through the bight of the first, and haul the ends tight. **WALL-KNOT**, double, Pl. I. fig. 40, is made by passing the ends, singly, close underneath the first wall, and thrusting them upwards through the middle, only the last end comes up under two bights.

LACING. When a sail is laced to a mast, it is best to take cross turns, backwards and forwards, on the fore-side of the mast only, so that the sail may slide up or down.

LASHING. **LASHING OF BLOCKS.** Pl. II. fig. 18. Take a number of turns, parallel to each other, through the eye of the block-strap, and round any object, as a mast, yard, &c. and, to strengthen the lashing, take several cross turns with the end, and make fast. **LASHING OF BOOMS,** that is, the spare topmasts, yards, &c. stowed on the boatskids on each side. They are first secured in different places with several turns of lashing on one side, independent of the other; then they are cross-lashed together in a strong manner, and well frapped in the middle. In gales of wind, to prevent the booms shifting, several turns, with a hawser, are taken round the booms, and through large triangular ring-bolts in the sides; and sometimes the turns are passed through an opposite port, and round the side: the turns are then hove tight, frapped, and belayed.

LINES. Cordage smaller than ropes, and formed of two or more fine strands of hemp; as **HOUSE-LINE**, made of three strands used to seize blocks into their straps and the clues of sails; and to marl the skirts of sails to their bolt-ropes, &c. **LOG-LINE**, made of three or more strands, and used for the log, &c. **MARLINE**, made of two strands, and used for the same purposes as house-line. **LIFE-LINES**, for the preservation of the seamen, are worn hawser-laid rope: they make fast with two half-hitches round the strap of the lift-block and jeer, or tie-blocks, in the middle of the yard. **SPILLING-LINES** reeve through blocks, lashed on each side of the quarter-blocks of the lower-yards, then lead down before the sail, return upwards under the foot of the sail, and make fast round the yard with a timber-hitch. Spilling-lines of top-sails have two legs, which are each made fast with a timber-hitch round the quarters of the top-sail-yards, then lead down on the aft-side, return upwards under the foot of the sail, and reeve through a block on the fore-side, lashed to the tie-block on the yard, and then lead upon deck abaft the mast.

MARLING, Pl. I. fig. 29, is winding any line round a rope, and securing every turn by a hitch, so that they may be independent

dent of each other, and remain fixed, should either be cut through by friction. It is principally used to fix on the clues of sails and top-brims of topsails. Splices are marled down for serving with rope-yarn or twine.

MARTINGAL-STAY, to support the jib-boom, splices with an eye over the outer end of the jib-boom, then leads in through a score, cut in the lower end of the martingal, (which is an ash-bar, suspended from the fore side of the bowsprit-cap, to which it fastens,) has a double block turned or spliced into the inner end, that sets up, by its fall, to a single block hooked to an eye-bolt in the head.

MATS are made thus: Pl. III. fig. 34: A small rope or line is first tightly extended, horizontally, at nearly a man's height, and made fast at each end; across which foxes are placed in a regular manner, and hang down from their middles: then, beginning with the first next the left hand, it is crossed or plaited with that which is next the right hand; then taking that which was to the right hand and crossing it with its next; and so on in succession. This will make the mat downwards; and when finished to the length intended, it is begun again at top till its breadth is completed. Each twist is to be pressed tight; and each couple of foxes is to be twisted together at the bottom, to keep in their twists till the next in succession are interwoven with them. When the mat is completed to its depth, the bottom is selvaged, by placing another small rope or line across in a tight manner, similar to the headline, round which one fox is half-hitched, while the next fox is laid up at the back of it, and so on alternately.

When mats are thrummed, it is thus performed: Short pieces of the foxes are thrust under every other overlay of the foxes in every other row. To receive the thrums, a hole is opened with a small marline-spike: the thrums are afterwards cut off to an equal length, and their ends opened.

MOUSING A HOOK. Taking several turns of spunyarn round the back and point of a hook, and fastening it, to prevent its unhooking.

MOUSING A MESSENGER. Open every other strand for three strands, and thrust in the ends of a small rope or strand, in

in order to form a projection on the surface to prevent the nippers from slipping. The ends are not cut off close. Pl. II. fig. 12.

NETTING, Pl. I. fig. 34 and 35, is made by laying parallel to each other a number of small ropes of equal lengths; and by seizing each two together at certain distances; taking care that every seizing be between the seizings of the ropes immediately preceding. Or it is made by placing nails in the deck to regulate the size of the meshes, and seizing the ropes together close to the nails.

To **NIPPER** or **NIP** ropes, is to stop them with several turns of rope-yarn, or spunyarn, round each, and the ends made fast.

PAINTER. See **BOATS' ROPES**.

PARBUCKLE. Pl. III. fig. 1. A contrivance to hoist or lower bodies, by fastening the bight of a rope over a fixed object, and passing the ends of it under the body to be hoisted, &c. They are then turned upwards towards the bight, and hauled upon, or slackened, as occasion requires.

PARCELLING, Pl. III. fig. 21, long narrow slips of worn canvas, laid smooth round a rope in spiral turns, and well tarred. It is previously done when a rope is to be served, or a mouse formed upon stays.

PARRAL. Of parrals there are four sorts, viz. one sort is formed of a single rope, covered with spunyarn or leather, and having an eye spliced in each end; another sort is formed of two ropes, Pl. III. fig. 27, which reeve alternately through a rib and truck, and have an eye in one end; a third sort, calculated to confine the jaws of a jib-boom to the mast, Pl. III. fig. 28, is formed of a rope which reeves through several trucks without ribs; and a fourth sort is formed of a truss, by which the yard may at any time be slackened from the mast, or may be confined close by tackles connected to their lower ends, which lead upon deck, and are most convenient for the lower yards. The first and second sorts are used for topfail and topgallant yards.

PARRAL-ROPES, prepared in the house, have an eye spliced in each end; are wormed, and served with spunyarn from eye to eye: they are then doubled, and cut asunder in the bight. The end of one is thrust through the upper hole in the ribs, and through the

the hole in the middle of the trucks, and so alternately. The other end is brought the reverse way through the lower hole in the ribs and trucks.

PASSAREE. Any rope fastened round the cat-head and fore-tack, to keep tight the leech of the sail in light winds.

PENDENTS. — **BILL-PENDENT**, prepared on shore, has a hook and thimble spliced in one end, and served with spunyarn over the splice. — **BRACE-PENDENTS**, prepared on shore, have an eye spliced in one end to the size of the yard-arm, and a single block in the other end. The splices are served over with spunyarn. — **FISH-TACKLE PENDENT**, prepared on shore, has a large iron hook, with a thimble spliced in one end; and the ends of the splice tapered, marled down, and served over with spunyarn. — **FORE-TACKLE PENDENTS**, prepared on shore, are wormed, parcelled, and served with spunyarn, in the way of the cunt-splice. They are then spliced in the middle, to the circumference of the mast-head; have large thimbles spliced into the lower ends; Pl. III. fig. 44; are then wormed, parcelled, and served with spunyarn the whole length. Large ships having two pair of pendants to the main and fore-masts; the after-pendants are one foot longer than the foremost ones. — **GUY-PENDENTS**, prepared on shore, are doubled, and served with spunyarn in the bight, one fathom in length. — **MAIN-STAY-TACKLE PENDENTS**, prepared on shore, have an eye spliced in one end, and a double block in the other, and served with spunyarn over the splices. — **MAIN-TACKLE PENDENTS** are the same as the fore-tackle pendants. — **MIZEN-BURTON PENDENTS**, prepared on shore, have a cunt-splice in the middle to the circumference of the mast-head; thimbles spliced in the lower ends; and served with spunyarn over the splices. — **PREVENTER-BRACE PENDENTS**, prepared on shore, are spliced through the strap of the brace-pendent block; served with spunyarn over the splice; and are left the length of the service of the splice and length of the eye longer than the brace-pendent, with an eye spliced in the other end to the circumference of the yard-arm. — **QUARTER-TACKLE PENDENT**, prepared on shore, is spliced into the strap of the double block; served with spunyarn over the splice, and the other end whipt. — **REEF-TACKLE PENDENTS**, prepared on shore, have a double block

block spliced in the end, and are served with spunyarn over the splice. — **RUDDER-PENDENTS**, prepared on shore, are doubled and cut in the bight; they have a hook and thimble spliced in one end, and are served with spunyarn over the splice. They hook to the ring, in the end of the rudder-chains; the hook is moused; then stopped to hooks driven in the counter, over the rudder, at the quarters, and one between. A long tackle is hooked to a thimble, spliced in the ends of the pendants, and to an eye-bolt in the mizen-chains, and the fall leads in, through a port, upon the quarter-deck. — **TOPMAST-BURTON PENDENTS** are the same as mizen-burton pendants. — **TOP-ROPE PENDENTS**, prepared on shore, have a large iron thimble spliced in the lower ends; are marled over the splice in the rigging-house, and pointed when got on board. — **TRUSS-PENDENTS**, prepared on shore, are doubled, and cut in the bight: they have an iron thimble spliced into one end, and are served with spun-yarn one-third of the length. — **VANG-PENDENTS** are doubled, and served with spunyarn two fathoms long in the bight, and a double block spliced into each end, and served with spunyarn over the splices. — **WINDING-TACKLE PENDENT**, prepared on shore, has an eye spliced in one of the ends; the ends put in three times, and cut off short; the other end is whipt. It is also made fast round the mast-head, with a round turn and two half-hitches. The strap of the four-fold block is thrust through the eye in the end of the pendent, and a toggle driven through the strap. It is guyed out to the lower yard, to a block securely lashed, that the block may hang over the side. The upper block is connected by its fall to a treble block below, and the leading-part goes to the jear-capstan through the deck, or is swayd on by men. — **YARD-TACKLE PENDENTS**, prepared on shore, have an eye spliced in one end to the size of the yard-arm, and a double block in the other end. The splices are served over with spunyarn.

PLAITING, Pl. III. fig. 40, braided cordage, made by rope-yarns, &c. twisted together, and then laid one over the other alternately; or the end of a rope opened, and the strands placed together in the same manner.

POINTING,

POINTING, Pl. II. fig. 19, is tapering the end of a rope, or splice, and working, over the reduced part, a small close netting, with an even number of knittles twisted from the same, to prevent the end untwisting, and to make it go more easily through a block, or hole. Half the knittles are first laid down, leaving out every other one, then three turns of the warp is taken round them; then take up those knittles, and lay down the other half, and take three turns of the warp round them, and so on, alternately, until the length be once and a half the circumference of the rope. The end and upper part of the knittles are then round-seized, and snaked with twine, &c.

POINTS. Short pieces of braided cordage, plaited together as gaskets are; beginning in the middle with nine foxes, and tapering to five at the ends, and from one fathom and a half to one fathom in length. They are used to reef the courses and topsails.

PREVENTER-BREECHING. See **GUN-TACKLES**.

PUDDENING OF ANCHORS, prepared on shore. Worn hawser-laid rope is cut into lengths three times the diameter of the ring; and as many of these lengths as will cover the ring, which is about thirteen. Pl. IV. fig. 2. The ring is first chocked up-right, by wedging it in the hole of the shank; then well tarred, and parcelled with worn canvas, twice round, and marled down close with spun yarn. The turns of the puddinging are then passed, one turn and a half each way from the middle of the ring; then hove tight by a heaver, and well seized with two quarter and two end-seizings, that are snaked all round. The ends remaining are opened out, and payed all over with a good coat of tar.

PUDDENING OF MASTS AND YARDS. Pl. III. fig. 29 and 31. A small rope, in length twice the diameter of the mast or yard, has an eye spliced in each end, then stretched, and parcelled with worn canvas, woolded round with rope-yarn, tapering towards the ends, and holding a large substance in the middle; then served over with spun yarn, and sometimes pointed. It has a laniard spliced in one eye, and fixes to the mast or yard, by passing the laniard alternately through the eyes, and stopping the end. When used on masts, they are to sustain the weight of the yards, if an

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accident happens to the rigging; and, on the yards, to prevent the sheets from chafing the rope-bands, &c.

QUOINS. See **GUN-TACKLES.**

RACKING A TACKLE. Fastening together the fall of a tackle, or any two ropes, by passing two or more cross turns with rope-yarn round each part, and as many round turns above them; making fast the ends with a reef-knot.

RELIEVING-TACKLES. See **GUN-TACKLES.**

ROPE-BANDS differ from gaskets only in their length, being from seven to nine feet long.

ROPES. **BELL-ROPE** is hawser-laid rope, nine or twelve feet in length, which bends round a thimble in the eye of the bell-strap or crank. In the middle of the rope is a diamond knot, and at the end a double wall-knot, crowned. **BUOY-ROPES**, prepared on shore, Pl. IV. fig. 8 and 9. One end is unstranded for one yard in length, stopped with rope-yarn, and one of the nine smaller strands taken out of each of the three larger strands, which are then laid together again. The three smaller strands are double-walled right-handed close to the stop, then laid up their cunt-lines, and three fathoms next the knot wormed, parcelled, and served with spunyarn. When two or more buoy-ropes are knotted at the same time, after the knot is formed on each, the ends are spliced together, and the other ends made fast to tackles, and hove tight, which strains the knots close and firm. If a single buoy-rope be knotted after the knot is made, make a bend at one end, and attach a tackle to it, and make fast the other end; then bowse upon the tackle, and close the knot as before. **BREAST-ROPE** is fastened along the laniards of the shrouds, for safety, when heaving the lead in the chains. **ENTERING-ROPES** hang from the upper part of the stantions at the gangways. The upper end is thrust through an eye in the stantion, and is walled and crowned; and diamond-knots are made at about nine inches asunder along the whole length. **GUEST-ROPE** is fastened to an eye-bolt in the ship's side, and to the outer end of a boom, projecting from the ship's sides, by guys, to keep the boats clear off the sides. **PASSING-ROPES**, which lead round the ship through the eyes in the quarter, waist and forecastle stantions, have one end stopped through

through the eye of the gangway-stations, with a wall-knot crowned, and are set up forward with a laniard through an eye-bolt in the knight-heads, and a thimble turned into the end: the same on the quarters. **TILLER-ROPE** is white rope, first stretched, then doubled and marked in the middle; and there nailed to the middle of the steering-wheel barrel: seven turns are next taken round the barrel on each side in large ships, and five in smaller; the ends are then passed through a groove on each side the middle of the deck, under the wheel. To prevent wet going down, over each groove is a small box fitted with a sliding top, and a hole just sufficient to admit the rope, which traverses backwards and forwards, as the turns of the rope increase or decrease upon the wheel, by the helm being put on either side; sometimes a leather collar is nailed on the top, and surrounds the rope for three or four inches high. Each end, passing through the holes in the decks, is reeved through vertical sheaves, so fixed in a block, one on each side the midships close up under the deck in the gun-room, as to direct each end into its respective side, where it reeves through a horizontal sheave, fixed in a block at the end of the sweep: thence it leads back into midships, along a groove made in the back of the sweep, and is facilitated by rollers, fixed vertically in the back of the sweep. Each end is then passed through an eye, on each side of the upper part of a hoop, that is bolted on the fore end of the tiller: the ends are then passed under the sweep, through an eye on each side, in the middle of a hoop, driven on the tiller farther aft: lastly, an iron thimble is turned into each end, with a throat and round seizing, and sets up with a laniard to an eye-bolt, driven in each side of the tiller farther aft. In large ships it sets up with a gun-tackle purchase. When the tiller is worked upon deck, the tiller-rope is stretched, middled, and marked, and placed on the wheel as before: then reeved through a swivel-block, fastened on each side the middle of the deck, under the wheel; and through another that is lashed to an eye-bolt on each side of the ship: then brought into midships, to an eye, on each side of the hoop on the head of the tiller; and is there seized or spliced with a thimble.

RUDDER-LANIARDS. See **BOATS' ROPES.**

RUNNERS OF TACKLES, prepared on shore, have a double block spliced in one end, and served with spunyarn over the splice, and the other end whipt.

SEIZING is joining together two ropes, or different parts of one, with small rope, line, or spunyarn, by taking several close turns round them, from six to ten, according to the size of the rope: they are strained tight. The lower turns have always one more than the riding or upper turns; two turns are taken across the seizing, between the two ropes seized; the end is taken under the last turn, hove tight, and knotted, close to the jamming turn, if large, with a wall-knot, crowned, and if small, with an overhand-knot, and cut off. Seizings to the double straps of blocks are crossed each way with two turns. Pl. I. fig. 3, 4, 27, 29, &c.

A **SELVAGEE** is several rope-yarns placed together, and marled together with spunyarn, in the form of slings. Pl. III. fig. 48. It is used to attach the hook of a tackle to any rope, shroud, or stay, to extend them, by taking two or more turns round the same, and hooking in the bights.

SENNIT is braided cordage, made by plaiting from five to thirteen rope-yarns together, one over the other, according to the size and length, always keeping an odd yarn.

SERVING, Pl. III. fig. 22, is encircling a rope with line or spunyarn, &c. to keep it from rubbing and chafing. The end of the spunyarn, for service, is placed under the two or three first turns, to keep it fast; then two turns are taken round the rope and mallet, on each side of and round the handle. The mallet is then gradually turned round the rope by its handle, while another person passes the ball of spunyarn; and this is continued until the rope is covered the length required. When the mallet is within a few turns of the end, take the turns off the mallet, and pass them by hand, and heave the end well through, where it is made fast, as at first.

SHEEP-SHANK, Pl. I. fig. 26, is made to shorten backstays, &c. by bending part of the backstay, &c. in three parts, and taking a half-hitch over the bights.

SHROUDS, prepared on shore. The **LOWER SHROUDS**, Pl. I. fig. 27. The cablet is warped round two iron fids, fixed in the

the floor, as distant from each other as the first warp is long. The length is the distance from the top of the bolsters at the masthead to the foremost dead-eye. One end of the cablet is made fast to the lower fid, and passed round the upper fid; and so on, alternately, one turn close to the back of the other, and each hauled tight by hand. The additional length, gained by the turns lying round each other, is sufficient for the lengthening of each pair of shrouds, as they rake aft. When the whole gang of shrouds are warped out, the bights at the lower end are cut through, in a strait direction with the fids.

The upper bights are designed for the eyes, and are marked round the middle, beginning at the inner one, with one piece of spunyarn knotted, two for the second; and so on for the number required.

The outer turn is called **SWIFTERS**; and they are left four or five feet at each end longer than the shrouds, and have an eye spliced in them the circumference of the mast-head.

The shrouds, when cut to their length, are got up and stretched thus for worming: At the end of each length is made a bend; one end is passed through a pair of slings, fixed round a post, at the lower end of the house, and the other end through the strap of a treble block, and a fid thrust through each bend. The treble block is connected by its fall to a double block, lashed round a post, at the upper end, thus: The standing-part of the fall is fastened to the becket, at the arse of the double block; then reeved through the first sheave of the treble block, then through the first sheave of the double block on the same side, and so on alternately, and the fall carried and attached to the windlafs, by three or four round turns. The windlafs is put in motion by men, with levers, or handspecs, and each length thus stretched, hand-tight.

The rope used for the fall is commonly five-inch white rope.

All shrouds are wormed with double spunyarn, one-fourth the length from the centre to the eye, on each side; but the foreleg of the foremost pair is wormed all the way to the end.

Each length, after being wormed, is hove out by the same purchase, till each pair has acquired, by stretching, once and a half the

the length of the eye; and should remain on that stretch twenty-four hours before the service is laid on.

Shrouds are wormed before they are hove out to lengthen, because the worming of cable-laid ropes encreases, in tension, with the rope; and thereby draws smooth and even into the cunt-line.

The eyes of all shrouds are parcelled with worn canvas, well tarred; about one fathom and a half on each side of the middle, for large ships, and proportionably for smaller; and then served with spunyarn one-fourth of their length: each turn of the serving is laid close, and strained tight round, to prevent the water penetrating. The fore-leg of the foremost pair of shrouds is served the whole length.

Swifters, when stretched, have the length of the splice set off on each side of the middle; and likewise the length of the eye, or circumference of the mast-head. The latter is parcelled and served as above. They are then cut asunder in the middle, and spliced to the circumference of the mast-heads; then got on the stretch, and served over the splice one-fourth of the length.

The bights of shrouds are seized together to the circumference of the mast-heads; the seizing of the first shroud is put on below the bolster, or trestle-trees, with seven under and six riding turns, and a double cross turn over all. The seizing of each shroud is to be laid its breadth below the next, and clear of each other, to prevent chafing.

Brigs have four pair of shrouds forward; and the foremost shroud and pendent are in one.

TOPMAST-SHROUDS, Pl. I. fig. 28, are warped out on the floor, as the lower-shrouds are, and fitted to the circumference of the topmast-head.

In the foremost-shrouds, on each side, is seized a sister-block, below the futtock-staff.

TOPGALLANT-SHROUDS are fitted as the topmast-shrouds are, except that, instead of a sister-block, a thimble is seized in the two foremost pair on each side, close up to the hounds.

BOWSPRIT-SHROUDS, prepared on shore, are made of cable-laid rope. They have an iron hook and thimble spliced in the inner ends, and are served over the splice.

PREVENTER-

PREVENTER-SHROUDS are made of a spare hawser, the bight of which is well parcelled: the end is passed round the mast-head between that and the topmast, and seizes as the other shrouds. At each end is turned-in a dead-eye, that sets up with a lanjard to a spare dead-eye in the channel.

SKIATIC-STAY, for hoisting and lowering burdens out of or into ships, clinches or makes fast with two half-hitches, and the ends stopt, round the heads of the main and fore masts, with a tackle depending from it over the hatchway.

SLINGS. See **BOATS' ROPES.**

SLINGS AND STRAPS, for the lower yards, prepared on shore. The strap has an eye spliced in each end, with a long and short leg, to the circumference of the yard, and served with spun-yarn from eye to eye, with a thimble seized in the bight.

Slings have an eye spliced in one end; then wormed, parcelled, and served almost the whole length. The spritsail slings are wormed, and served with spunyarn.

SNAKING. Pl. II. fig. 13. A sort of fastening to confine the outer turns of seizings, &c. with the same size rope, line, spunyarn, &c. by passing it across, and under the outer turns at angles.

SNAKING THE STAYS, or ropes, on the quarters, Pl. III. fig. 23, instead of netting, is seizing proportioned sized rope, at angles, from one stay or rope to the other, alternately, in a parallel direction along the whole length. Its use to stays is, that one part may remain perfect and independent of the other, should it be shot away.

SNOTTER. A short rope, spliced together at the ends, and served with spunyarn, or covered with hide: it is seized to the size of the mast, leaving a bight to fit the lower end of a sprit, which it confines to the mast.

A **SPANISH WINDLASS** is formed of an iron bolt, placed in a hole, which is hove round by a woolder that acts as a lever for turning it round. It is used to stretch small rigging for serving, &c. &c. Pl. III. fig. 38.

SPANS about the mast, prepared on shore, have a single block spliced in one end, and served with spunyarn the whole length,

length, except what is left at the other end to splice in another block on board.

LONG AND SHORT SPANS, prepared on shore, have a single block spliced in each end, and the splices served over with spun-yarn. One end is finished in the house, the other in the top, after they are hitched round the cap.

SPANNING OF BOOMS is performed by passing a rope alternately at angles from one side to the other round the outside boom, spar, or topmast, so as to confine them from rolling about.

SPANNING OF RUNNERS is taking several turns round both runners abaft the mast, and frapping the turns.

SPLICING. The **CUNT-SPLICE**, Pl. II. fig. 1, 2, and 3, forms an eye in the middle of a rope, &c. as the eye-splice doth at the end, by interweaving the ends into the strands of the rope, &c. at certain distances from each other, so that the rope becomes double, in the extent of the splice. This splice is used for pendants, or any thing that goes over the mast-head with a splice; also for lead-lines, log-lines, and fishing-lines, where the short splice would be liable to separate. **EYE-SPLICE** forms an eye, or circle, at the end of a rope, on itself, or round a block, &c. Pl. II. fig. 4 and 5. The strands are untwisted, and their ends pushed through intervals made in the strands, by a fid or marline-spike, at that distance on the rope which the eye may require; observing to put the middle end through first, then pass it over the surface of the second strand, and push it through the third: repeat the same with the two other ends, laying them fair asunder. The ends of this splice are tapered, by gradually reducing the yarns, then placed smooth along the rope; then marled, and served with spunyarn, round all blocks in the royal navy. **LONG SPLICE** is made to rejoin a rope or ropes, intended to reeve in a block, without encreasing its size. Pl. II. fig. 6 and 7. The ends are opened from one half to a whole fathom in length, and placed close together regularly one in the other; one strand is then unlaid, and the opposite strand laid up its intervals each way, and the two strands knotted together at the ends and middle of the splice; the ends are then halved, and pushed under the next strand. **SHORT SPLICE**, Pl. II. fig. 8 and 9, is made by untwisting the ends of

two

two ropes, or the two ends of one rope, and placing the strands of one opposite to and between the strands of the other: draw them close together, and push the strands of one under the strands of the other, the same as the eye-splice. This splice is used for block-fraps, slings, &c. and the ends are tapered and served. **TAPERED SPLICE**, Pl. II. fig. 10 and 11, mostly used on cables, is made by unlaying a certain length of each cable, then placing them together, and interlacing the strands, as in the short-splice, twice each way, and hauled tight each time; then inlay the strands, or ends, successively, and reduce them, by cutting away one strand; then interlace the two remaining strands, and reduce them to a single strand, which is again thrust through, and cut off. The splice is then served over with spunyarn, something more than the whole length. **DRAWING-SPLICE**, Pl. II. fig. 14, used on cables, is made by unlaying about three fathoms of the ends; then place them together, and make a short splice: then leave about one fathom, and thence reduce each strand to a long taper, by gradually cutting away as many yarns as necessary, and neatly point over the taper; then lay the ends up the cunt-lines, and clap on a quarter-seizing at each end of the splice, an end-seizing at the beginning of the pointing, and a stop at the ends of the tails. This is the best splice for cables, as it may be readily taken asunder. Another good method of making a **CABLE-SPLICE** is to put the ends in twice each way; then to pick out the strands, worm part of them round the cable, and taper away the rest, which should be marled close down; then clap on a good throat and two end-seizings of ratline.

STANDING-BACKSTAYS, for topmasts, prepared on shore, are wormed, and served with spunyarn, in the way of the top-brim. They are fitted as the shrouds are, except that the third pair is tongued together the circumference of the topmast-head: the tongue is a short piece of rope of the same circumference as the stay, and is spliced into the strands of the stay; the ends of the tongue are tapered, marled down, and served over with spunyarn. — **STANDING-BACKSTAYS**, for topgallant-masts, prepared on shore, are fitted as the shrouds are; wormed, and served in the way of the top-brim.

STANDING-LIFTS, prepared on shore, have an eye spliced in one end, and are served with spunyarn over the splice.

STAYS, prepared on shore, for the lower-masts, have an eye in one end, sufficiently large to reeve itself through

Each stay is got upon the stretch, and hove well out with the windlafs, as the shrouds are; then wormed with spunyarn one-third of its length; and is hove out a second time, till the middle strand, or heart, is made to break in several places.

The mouse, Pl. I. fig. 42, made with spunyarn, in the shape of a pear, is then raised on the stay, at one-third of its length, by some; but, by others, two sides of the mast-head, added to twice the length of the trestle-trees, gives the length from the eye to the mouse. The ground of the mouse, or the length from the shoulder, or upper part, to the beginning of the tail, is one-third the circumference of the stay; or else it is laid with as many turns in length as the shoulder is raised above the stay, which should be in circumference three times that of the stay, and from that to diminish to the shape in the plate, by gradually lessening the turns in the spunyarn: every turn of the spunyarn to be hove well tight with a large serving-mallet, and beat close. Between the turns of the spunyarn are laid several rope-yarns, lengthways, and their ends brought back over the next turn from the shoulder, which prevents their slipping. When all the turns are laid, it is parcelled over with worn canvas, well tarred, pegged on, and pointed over with inch or three-quarter rope; each knittle to be in length five times the circumference of the stay, to have an even number, and hove tight when passed. The shoulder of the mouse must be covered with knittles, and their number diminished as they are worked into the smaller parts. The ends of the knittles are stopped with spunyarn at the front with a secure seizing. The warp to be marline, and the pointing continued the circumference of the stay for the length of the tail. The collar, the eye, and one fathom below the mouse, are parcelled with worn canvas, well tarred, and served over with spunyarn.

STAYS, for the topmasts, prepared on shore, are fitted as the lower-stays are. The collar is in proportion to the topmast-head.

PREVENTER-STAY, the same as the stay.

STAYS,

STAYS, for topgallant-masts, prepared on shore, are cable-laid in large ships, and hawser-laid in small ones. The latter has an eye spliced in the upper end to the circumference of its mast-head, and served with spunyarn over the splice. The cable-laid is fitted with a collar, and moused, as any other stay.

STERNFAST. See **BOATS' ROPES**.

STERN-LADDERS are made of cable-laid rope thus: Pl. I. fig. 32: Double the rope, that it may be long enough to reach the water, nearly, from the upper part of the stern: then splice an eye in each end, or make an eye in the middle, by splicing the ends together, and a seizing. The steps are commonly tree-nails, thrust horizontally through the strands of the rope on each side, sixteen inches asunder, and a score is cut round the middle, for the concluding-line, or middle rope, which is fastened round every step with a clove-hitch in the score. The ladders are lashed to an eye-bolt in the upper part of the quarter-piece, or stern, one on each side.

STOP is a temporary seizing, and performed similarly. When used to stop worming, it is snaked.

STOPPERS, DECK AND BITT, prepared on shore, are divided into ten short and two long stoppers. The two long stoppers, from a first rate ship to a sloop, are cut sixteen feet; and, when knotted, to be twelve feet six inches. The short stoppers are each cut twelve feet six inches; to be, when knotted, eight feet three inches long. One end of each stopper has a double wall-knot, and the ends led up through the middle, and whipt with spunyarn: the other end is only whipt with spunyarn. **SHROUD-STOPPERS**, used to confine a shroud together, where injured, are of different lengths and sizes; have a double wall-knot, crowned, and a laniard, made of fennit, at each end. When used, one laniard is passed round the shroud and stopper, with several turns above, and with the laniard the same below, the wound and the end put under the last turn, and jambed. **FORE-TACK** and **SHEET STOPPERS**, for securing the tacks and sheets till belayed, are of hawser-laid rope, about ten feet long, have an eye spliced in one end, the other end opened out, and made selvagee-fashion three-fourths the length. In large ships the fore-tacks lead in

under the forecattle, and the stopper reeves through the eye round the topsail-sheet bitts, and clap on the tack, with a round turn under the standing-part, and lead up with several turns in the cunt-line, and the end held on. **MAIN-TACK STOPPERS** are of cable or hawser-laid rope, about two fathoms long, have a double wall-knot, crowned, at one end, and a hook and thimble spliced in the other end, that hooks to a ring-bolt in the side, and claps on the tack, with several turns taken round the tack and stopper, with the laniard close under the knot.

STRAPPING OF BLOCKS, prepared on shore. The whole length of all the different sizes of block-strapping is got upon the stretch, and hove out tight for worming and serving; it is then wormed and served, and cut into shorter lengths, to suit the different blocks.

The strapping of jeer-blocks is wormed, parcelled, and served. Strapping of four inches diameter, and above, is wormed and served: and all under four inches is only served with spunyarn; except the spritsail-brace, bunt-line, and leech-line, blocks, that are lashed under the tops, which are only served with spunyarn over the splice, and the tail left half a fathom in length.

Jeer-blocks are double scored; and the double and treble blocks are strapped with a double strap, thus: It is spliced together at the ends, and, when doubled, to be the size of the block and circumference of the yard. It is then doubled, and the block seized in the bight, with a long and short leg; the splice lying in the arse of the block. Pl. III. fig. 3, 5, and 13.

The scores of all blocks are to be well tarred, and the pin and sheave examined, before the strap is put on. Pl. III. fig. 10 and 11. The block is set well into the strap with wedges, thus: The four parts are frapped together with rope-yarn under the block, with a chock between, and the wedges are set between the breast of the block and chock. Then the strap is nippered, with a heaver, round the block; the wedges, chock, and frapping, taken away, and the block hung upon the stake-head, or post, and the strap well seized together, close under the block, with nine under and eight riding turns, every turn strained tight round by a heaver, and crossed each way with two turns.

Jeer-

Jeer-blocks, for the mast-heads, are strapped with long eyes, to receive many turns of the lashing; and the block is seized into the strap, as before; as are all seizing-blocks, in proportion to their sizes. The straps are cut agreeably to the following table, for single-scored blocks; double-scored blocks requiring twice that length.

A TABLE OF THE DIMENSIONS OF STRAPS FOR LASHING AND SEIZING BLOCKS.							
Size of the Blocks.	Circumf. of the Straps.	Length of the Straps.		Size of the Blocks.	Circumf. of the Straps.	Length of the Straps.	
Inches.	Inches.	Ft.	In.	Inches.	Inches.	Ft.	In.
17	5	7	4	10	3	3	9
16	4½	6	8	9	2½	3	4
15	4	6	0	8	2½	3	0
14	3½	5	4	7	2½	2	9
13	3½	4	11	6	2	2	6
12	3½	4	6	5	1½	1	9
11	3	4	2	4	0½	1	6

Blocks, strapped with eyes, or thimbles spliced in the ends, are seized tight into the bight, and the legs left long enough to lash through the eyes, round a mast, yard, &c. as the topsail clue-lines, clue-garnets, and spritsail clue-lines, &c. Pl. III. fig. 4.

Blocks, strapped with a thimble, or hook and thimble, have the strap spliced together at the ends. The block is fixed in one bight, for the splice to lay on the arse of the block, and the thimble in the other bight; the seizing is put on, between the block and thimble, with eight under and six riding turns, according to the size of the block, each turn strained tight by a heaver; the turns double crossed, and the end stopt with a wall-knot crowned. Pl. III. fig. 14.

All hook-blocks (except for luff-tackles) have the strap between the seizing, and the thimble left the length of the block.

Blocks, strapped with double tails, are fixed in the strap, similar to blocks with eye-straps; and those with a single tail are spliced in, and served with spunyarn over the splice. Pl. III. fig. 2, 6, and 7.

Girtline-blocks are strapped in the house, with a lashing-eye, Pl. III. fig. 8, and the girtlines reeved.

SWIFTERS.

SWIFTERS. Those for the bars of capsterns are reeved through holes in the extremities of the bars, so as to strain them firmly together like the spokes of a wheel.

TACKLE. A machine formed by the connection of a rope or fall, with an assemblage of blocks. The number of parts of the fall is more or less, in proportion to the effects intended to be produced. That part of the fall which is fastened to one of the blocks is called the **STANDING PART**, and the other parts of it are called the **RUNNING PART**. Pl. II. fig. 16 and 18.

Tackles are used to raise, or remove, weighty bodies; to support the masts, extend the rigging, or expand the sails. They are either moveable, as connecting with a runner, or have one part fixed to an immoveable station, by a hook, lashing, &c.

A tackle is a convenient kind of purchase, but subject to much friction. Its power will be (the friction not considered) as the number of parts of the fall that are applied to sustain the weight. If a tackle consists of a double and a single block, and the weight to be hoisted is hung to the double block, there will be four parts of the fall; and the weight resting upon four ropes, equally stretched, each must bear the same part of the weight. Thus, suppose the weight hung to the double block be four hundred, then one hundred applied to the hauling part of the fall will suspend it; and, if as much more power be applied as will overcome the friction, it will purchase the weight: but, had the weight been hooked to the single block, it would have rested on three ropes only, each of which would bear a third of the weight; therefore a third of the weight being applied to the hoisting part of the fall would suspend the weight, when hooked to the single block; and as much more power being applied as will overcome the friction would purchase the weight.

Ropes, if tight laid, will not easily bend round small sheaves, but will take up a considerable part of the power to force them into their proper direction; hence it follows, that blocks with small pins, large sheaves, and slack-laid ropes, are the best materials to obviate friction, and make tackles with.

The blocks that are fixed are only for the convenience of turning the direction of the fall, they add nothing to the power of the

the purchase, but, on the contrary, destroy so much as is necessary to overcome their friction, and are therefore to be avoided as much as possible.

The **ANCHOR-STOCK TACKLE** is composed of a double block, and a single block, strapped, with a hook and thimble. Pl. III. fig. 9. The double block is hooked to a selvagee fastened round the stock of the anchor under the first hoop, and connected, by its fall, to a single block, hooked to a selvagee fastened round the laniard of the main-stay; the fall leads in upon the forecastle. **BOOM-TACKLES** are composed of double and single blocks, strapped, with tails, and are used in getting the studding-sail booms in or out. **BOWLINE-TACKLE** is composed of a long tackle, and a single block, strapped, with a hook and thimble: it is used to bowse up the main-bowline, when the ship is upon a wind. **BURTON-TACKLES** are composed of double and single blocks; see the single block, Pl. III. fig. 49; and are used with pendants, to set up the shrouds, support the topfail-yards, &c. Those for the yards are sometimes hooked to a selvagee, or strap, round the outer-quarter of the yards, and swayed tight by their fall upon deck. **DOWN-HAULER-TACKLES** to the topfail-yards are luff-tackles, hooked to selvagees round the yard; the fall leads upon deck. A **FISH-TACKLE** is composed of a long tackle and a single block, strapped, with eyes, and is used, with a pendent, to fish the anchor, and get it into its place. Pl. III. fig. 25. **GARNET-TACKLE** is composed of a double block, and a single block, strapped, with a hook and thimble: it is hooked to the skiatick-stay in merchant-ships, and is used to hoist goods in or out. **JIGGER-TACKLES** are composed of double and single blocks, strapped, with tails, and are used for topping the main and fore yards by the lifts, &c. A **LONG TACKLE** is composed of two blocks, a long-tackle block and a common single-hook block. The long-tackle block is double, but it resembles two single blocks joined together at their ends. Pl. II. fig. 18. **LUFF-TACKLES** are composed of double and single blocks, strapped, with a hook and thimble, and are used occasionally at any part of the ship. **OUTHALLER-TACKLE** is composed of two single blocks, strapped, with tails, and is used to bowse out the jib-boom. **PORT-TACKLES** are used to hoist and lower

lower the port-lids. They have a span with a single block, cross-seized in the bight; each end of the span is then thrust through holes in the side of the ship, and clinches, or splices, to a ring-bolt on each side of the port: observe, the port should be close shut, that the span may be of sufficient length. Through the single block in the span is reeved a runner; in one end of which is spliced an eye, that goes over a hook driven in the side of the beam. The other end of the runner splices, or turns-in to an eye, made by one end of the fall spliced round another single block, which serves as a strap to the same. The other end of the fall reeves through another single-block strap, with an eye that goes over a hook driven into the same side of the beam, and the leading-part of the fall belays round an iron clamp, nailed on the side of the beam. Port-tackles on the quarters have a span and single block turned in the bight, as the lower ports, and the ends spliced in the ring-bolts in the ports without-side. The fall is spliced round a timber-head, or eye-bolt, in the side, and the leading-part reeves through the block in the span, and is hauled upon by men on the deck. **QUARTER-TACKLE** is composed of a double block, strapped, with eyes, and a single block with a hook and thimble, having a long strap like fig. 49, Pl. III: they are used to hoist up water and provisions. **REEF-TACKLES** are composed of two double or two single blocks; one block is spliced into a pendent, and the other is strapped, with an eye: they are used to draw the extremities of the reefs close up to the yard-arms, for reefing the sail. **RELIEVING-TACKLES** are luff-tackles, used to the fore-end of the tiller, when the tiller-ropes are damaged: they have one end made fast to a rope-strap, with a thimble on each side of the tiller; and the other end to an eye-bolt in the side. **RIDGE-TACKLE** is composed of a double block, and a single block, strapped, with an eye: it is used to suspend the awning in the middle. **ROLLING-TACKLES** are luff-tackles, used to the topfail-yards, to support them, and preserve the parrals: they are hooked to a selvagee, or strap, round the lower cap; also to a strap or selvagee round the inner-quarter of the yard; they are bowled tight by the fall on each side in the top, and belay round the mast. **RUDDER-TACKLES** are composed of long tackle-blocks and single

single blocks, strapped, with hooks and thimbles: they are used to save or direct the rudder when any accident happens to the tiller. **RUNNER-TACKLES** are composed of double and single blocks and a pendent; the lower blocks are strapped, with a hook and thimble, Pl. III. fig. 49: they are used to set up the shrouds, and to get the mast-heads forward, for staying the masts. **STAY-TACKLES, MAIN AND FORE HATCH**, are composed of double and single blocks, strapped, with hooks and thimbles, except when the blocks are spliced into a pendent; the single blocks have a long strap, like Pl. III. fig. 49: they are used for getting the provisions, &c. out of the fore and main hold, and for getting the boats in or out. The pendent, formerly, travelled on the stay, by iron thimbles; but this is now discontinued in the royal navy, as they much injured the stay by the friction. **STAYSAIL-STAY TACKLES** are composed of double and single blocks; the lower blocks are strapped, with a hook and thimble: they are used to set up the jib, and other staysail-stays. **SHIFTING-BACKSTAY TACKLES** are composed of double and single blocks, strapped, with a hook and thimble, and are used to set up the shifting-backstays, where wanted. **TOPMAST-STAY and PREVENTER-STAY TACKLES** are composed of long tackle-blocks and single blocks; the lower blocks are strapped, with a hook and thimble: they are used to set up the topmast and preventer-stays. **FORE TOPGALLANT-STAY TACKLE** is composed of a double and a single block, and is used to set up the fore topgallant-stay. **TACK-TACKLE** is composed of a double and a single block, strapped, with hooks and thimbles; and is used for bowfing down the tack of fore-and-aft mainsails. The **TOP-TACKLE** is composed of double or treble blocks, Pl. II. fig. 16: it is attached to the top-rope pendent, and used to erect the topmasts, at the heads of the lower masts. **TRUSS-TACKLES** are composed of two double blocks, strapped, with hooks and thimbles; and are used to secure the lower yards to their masts, being hooked to the truss-pendent. **WINDING-TACKLE** is composed of a four-fold and a treble block, or a treble and a double block, strapped, with eyes: it is attached to the winding-tackle pendent, and is chiefly used to get the guns in and out. **YARD-TACKLES** are composed of double and

single blocks; the double blocks are spliced into the lower ends of pendants, and the single blocks are strapped, Pl. III. fig. 49, with hooks and thimbles: they are used to hoist the boats in or out; but are sometimes carried aft, and hooked to eye-bolts in the side, to prevent too great a strain on the braces in bad weather.

TACKS, MAIN AND FORE, prepared on shore, are cable-laid, and are tapered in the making. The largest end is opened out long enough to heave the knot close together: the knot is double-walled and crowned; the ends are thrust through the walling, then scraped down, served over with spunyarn, and wormed, parcelled, and served with spunyarn one-fourth of the whole length.

THRUMMING. Interplacing short pieces of thrumbs, or rope-yarn, in a regular manner, into matting, through intervals made by a fid.

TIMENOGUY. A rope fastened at one end to the fore-shrouds, and nailed at the other end to the anchor-stock, on the bow, to prevent the fore-sheet from entangling.

TONGUE. A short piece of rope spliced into the upper part of standing-backstays, &c. to the size of the topmast-heads: it is served over with spunyarn, and is used to keep them open to the size of the mast-heads.

TOPPING-LIFT, to support the topmast-studding-sail boom in a gale of wind, is a pendent clinched round the middle of the boom, then led up through a block lashed to the topmast-cap; the end is then turned up with a throat and round-seizing, and a tackle, hooked therein, sets up in the top by its fall. This should be done before the sail is set.

TRAIN-TACKLES. See **GUN-TACKLES**.

TRAVELLER. A large iron thimble, whose diameter is larger than the common thimbles, though the surface is smaller. Pl. III. fig. 20. Travellers are used to facilitate the descent of topgallant-yards by the back-stays, the travellers being placed on the back-stays, and surrounded by a short rope, or tail, which is fastened round the yard-arms.

TRAVELLING-

TRAVELLING-BACKSTAYS, used in bad weather to support the fore and main topmasts, splice into a span, round the topmast, under the parral, and set up in the chains, with a luff-tackle, to an eye-bolt. They travel up and down the topmast occasionally, with tricing-lines, that splice into a thimble, on each side of the span, and through blocks seized to the topmast trestle-trees, and lead into the top.

TYES, for lower-yards, prepared on shore, are wormed, parcelled, and served with spunyarn for three-fourths of their length. **SINGLE TYES**, for the topfail-yards, prepared on shore, have a double block spliced in the lower end, and are served with spunyarn over the splice.

WHIP. A small single tackle, formed by connecting the fall to a single block, or with two blocks, the one fixed and the other moveable: it is used to hoist light bodies out of the hold, &c.

WHIP-UPON-WHIP. Pl. IV. fig. 10. The greatest purchase that can be gained by blocks, which is formed by fixing the end of one whip upon another whip-fall. Thus two single blocks will afford the same purchase as a tackle, having a double and a single block, and with much less friction. This purchase should therefore be used whenever the length of the hoist will admit of it. To topfail and topgallant yards, that hoist with a single tye, there is sufficient room to apply this purchase as haliards, which will overhaul with great facility.

WHIPPING, to prevent the unravelling of the end of a rope. Pl. II. fig. 13. Take several turns of spunyarn, &c. round the end of the rope, and lay one end under the four first turns and the other end under the four last turns, and haul tight. Another method is, to knot every turn on the contrary side of the rope, hauling it tight, and finishing the last turn with a reef-knot.

WOOLDINGS, round masts or bowsprits, prepared on shore, are performed by a machine, called a horse, made with two cheeks of oak plank, and a small windlass in the middle: one end of the cheeks rests upon the ground, the other against the mast or bowsprit, being hollowed to fit their convexity. The number of turns of each woolding is from thirteen to fifteen. The first turn is whipt at the end with spunyarn, and nailed to the mast or bowsprit

with three nails, and a leather button under the head of each nail. The turns are passed close together singly, and every turn hove tight, by the windlafs being made fast to the middle, with a hitch round an iron pin, and then hove with two levers, or handspecks, one at each end. Every turn, when hove tight, is fastened with a nail and leather button, each nail being regularly below the other to the middle turn, and then above. The number of wooldings on a main-mast are from ten to twelve, according to its length, or one woolding between every hoop. The fore-mast has one woolding less than the main-mast. Mizen-masts and bowsprits have one woolding under the hounds, and near the outer end of the bowsprit.

WORMING. Pl. III. fig. 21. Wind a small rope in the cunt-lines of the strands of cables, shrouds, or stays; and spunyarn in those of ropes four inches in circumference and above. The first end of the worming is securely stopped; it then fills one interval, or cunt-line; and, when arrived at the end of the length intended to be served, it is there stopped; then laid back into the second interval; and so on successively, stopping it at the ends. When worming is wanted to be cut without waste, observe this general rule. Once the length of the service, multiplied by the number of strands, or intervals, and one-third more added, gives the length of the worming. — Example. Twelve fathoms of service, in a four-strand rope, will take sixty-four fathoms of rope for worming; and, for a three-strand rope, forty-eight fathoms.

THE

THE FOLLOWING ARTICLES AND THEIR SPECIFIC QUANTITIES ARE ALLOWED FOR PREPARING THE RIGGING IN THE

HOUSE.

<i>Names of the Articles.</i>	110 & 100 Guns.	98 & 90 Guns.	80 Guns.	74 Guns.	64 Guns.	50 & 44 Guns.	38 Guns.	36 Guns.	32 Guns.	28 Guns.	24 Guns.	22 & 20 Guns.	16 & 14 Guns.	Brig.
Spun yarn. — Cwt. —	86	84	80	82	80	70	70	70	68	64	58	52	$\left. \begin{matrix} 45* \\ 40 \end{matrix} \right\}$	18
Tarred Lines. — No. —	36	36	36	36	36	30	30	30	26	24	23	22	20	10
Tarred Marline. — lb. —	65	65	65	65	65	50	50	50	48	42	39	36	32	26
Worn Canvas. — Yds. —	650	600	600	600	600	500	515	500	480	440	395	350	300	180
Tar. — — Barrels. —	3½	3½	3½	3½	3½	2	2	2	2	2	2	2	1½	1
Tallow. — lb. —	88	86	84	84	82	70	70	70	66	62	59	56	50	30
Wooding-Nails. — No. —	1000	1000	900	1000	850	700	700	700	650	640	620	600	500	=
Old Leather Buckets. — No. —	4	4	4	4	4	3	3	3	3	3	3	3	2	=
Ordinary Twine. — lb. —	4	4	4	4	4	3	3	3	3	2½	2	2	2	2
Moufing for Main Log- Lines. —	18	18	18	18	18	15	15	15	14	14	14	14	13	10
Fore, Mizzen, and Rope	216 Fm.	216	216	216	210	180	180	180	175	170	168	166	160	=
Preventer-Stays. ½ Inch	150 Fm.	150	150	150	145	130	130	130	125	120	118	116	110	100

* If 6 pair of fore and main shrouds, 45 cwt. is allowed; if but 5 pair, only 40 cwt.

* If 6 pair of fore and main shrouds, 45 cwt. is allowed; if but 5 pair, only 40 cwt.

P R I C E S

ALLOWED IN THE

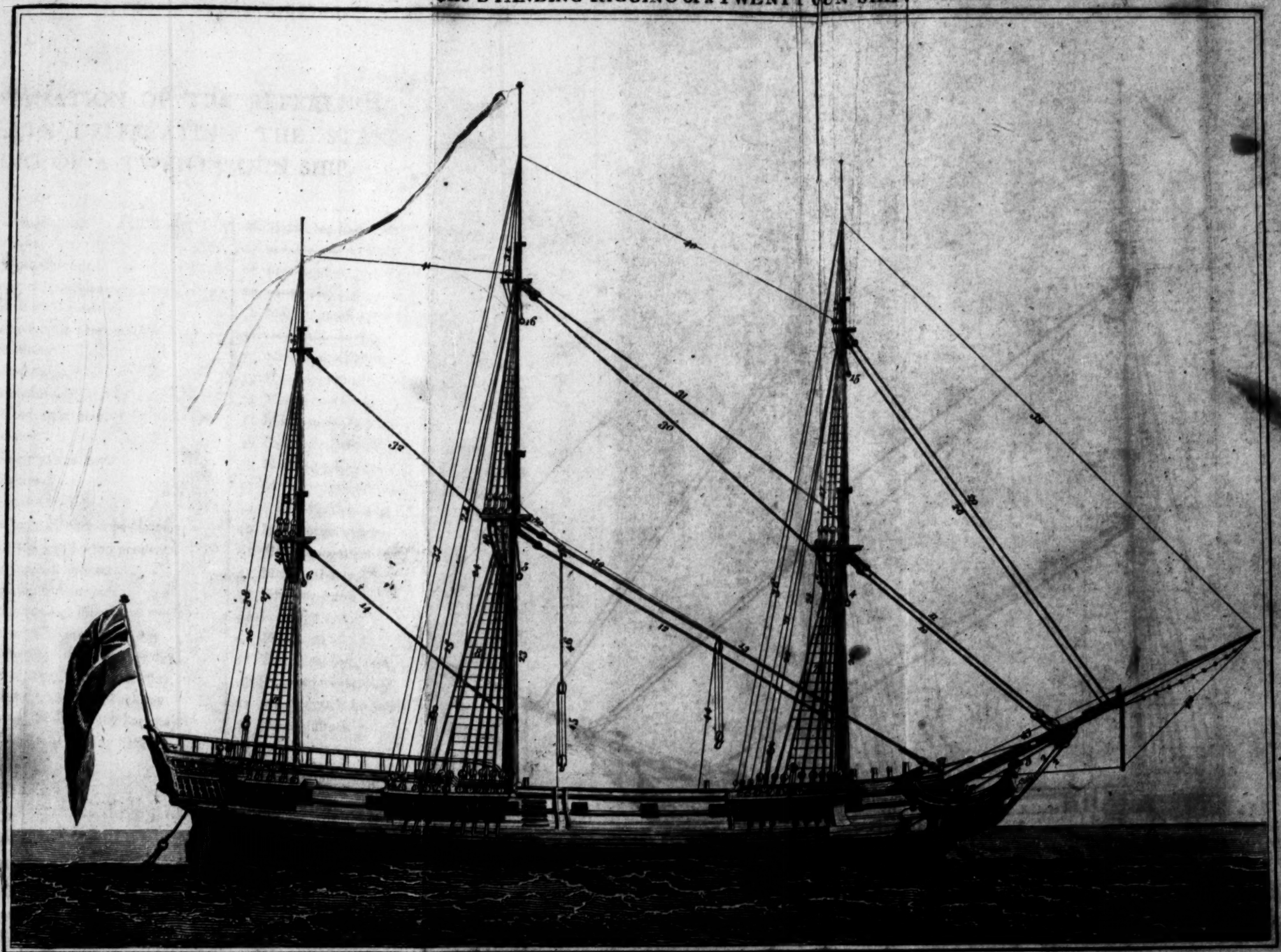
K I N G ' s Y A R D S

FOR FITTING A SET OF RIGGING ON SHORE TO A SHIP OF
EACH CLASS, (LABOUR ONLY.)

For ships of 100 guns	£98
90	97
80	97
74	97
64	87
50	73
44	73
38	71
36	67
32	59
28	51
24 and 20	51
Sloops of 300 tons and upwards	36
Brigs from 300 to 400 tons	26
200 to 300	25
Cutters	14

EXPLA-

The STANDING RIGGING of a TWENTY GUN SHIP.



Published as the Act directs, by D. Steel 1st August, 1794.

EXPLANATION OF THE REFERENCES ON THE PLATE DELINEATING THE STANDING-RIG- GING OF A TWENTY-GUN SHIP.

- | | |
|------------------------------------|---|
| 1 Gammoning. | 26 Mizzen-topmast standing backstay. |
| 2 Bobstays. | 27 ———— shifting backstay. |
| 3 Bowsprit-shrouds. | 28 Fore-topmast preventer stay. |
| 4 Fore-tackle pendants. | 29 ———— stay. |
| 5 Main-tackle pendants. | 30 Main-topmast preventer stay. |
| 6 Mizzen-burton pendants. | 31 ———— stay. |
| 7 Fore-shrouds. | 32 Mizzen-topmast stay. |
| 8 Main-shrouds. | 33 Fore-topgallant shrouds. |
| 9 Mizzen-shrouds. | 34 Main-topgallant shrouds. |
| 10 Fore-preventer stay. | 35 Mizzen-topgallant shrouds. |
| 11 Fore-stay. | 36 Fore-topgallant standing backstays. |
| 12 Main-preventer stay. | 37 Main-topgallant standing backstays. |
| 13 Main-stay. | 38 Mizzen-topgallant standing backstay. |
| 14 Mizzen-stay. | 39 Fore-topgallant stay. |
| 15 Fore-topmast burton pendants. | 40 Main-topgallant stay. |
| 16 Main-topmast burton pendants. | 41 Mizzen-topgallant stay. |
| 17 Fore-topmast shrouds. | 42 Martingal-stay. |
| 18 Main-topmast shrouds. | 43 Bowsprit-horfe. |
| 19 Mizzen-topmast shrouds. | 44 Fore-stay tackle. |
| 20 Fore-topmast breast backstay. | 45 Main-stay tackle. |
| 21 Fore-topmast standing backstay. | 46 Main-stay tackle pendant. |
| 22 Fore-topmast shifting backstay. | 47 Fore-futtock shrouds. |
| 23 Main-topmast breast backstay. | 48 Main-futtock shrouds. |
| 24 ———— standing backstay. | 49 Mizzen-futtock shrouds. |
| 25 ———— shifting backstay. | 50 Stay-tackle tricing-lines. |

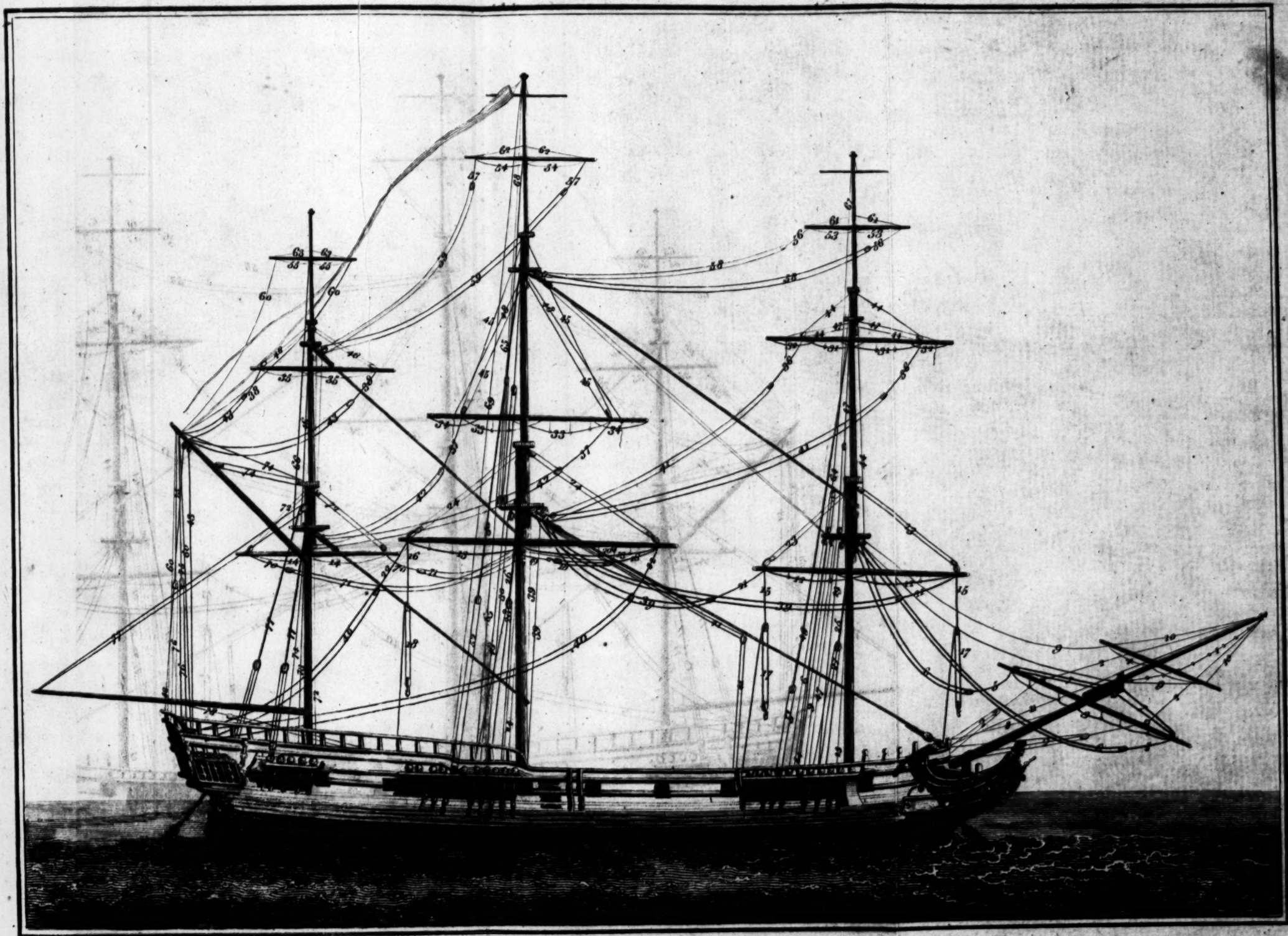
To prevent confusion of appearance in the plate of standing-rigging, the shrouds and backstays are represented only on the starboard side; but it must be remembered, that an equal number of them belongs to the larboard side. In ships from twenty guns downwards, the preventer-stays are sometimes placed under the stays; and to them the stayfairs are bent.

EXPLA-

EXPLANATION OF THE REFERENCES ON THE PLATE DELINEATING THE RUNNING-RIG- GING OF A TWENTY-GUN SHIP.

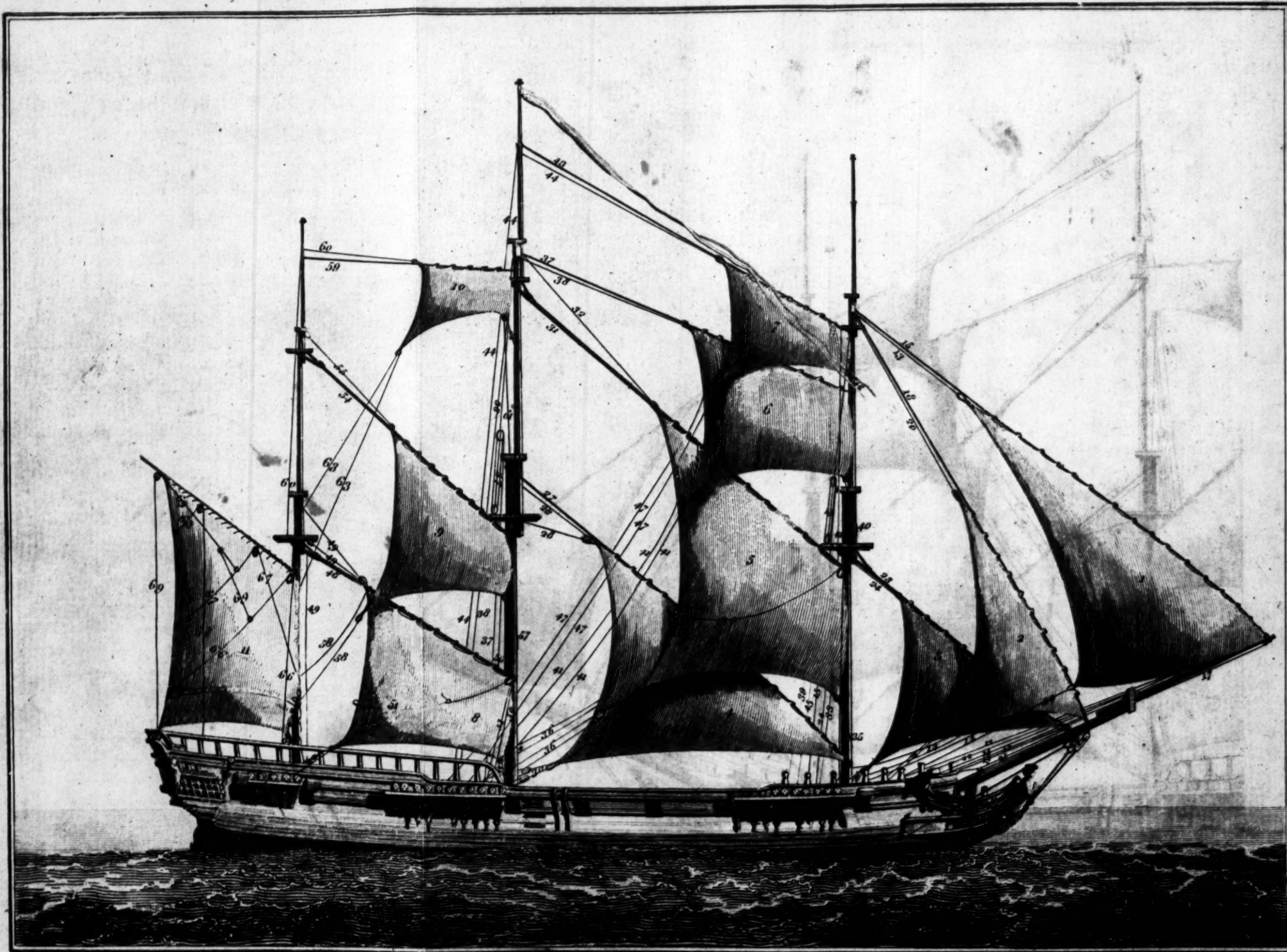
- | | |
|---|---------------------------------------|
| 1 Jib-horſes. | 39 Fore-braces. |
| 2 Jib guy-pendents and falls. | 40 Main-braces. |
| 3 Spritsail-yard horſes and ſtirrups. | 41 Fore-topſail braces. |
| 4 ——— topſail-yard horſes. | 42 Main-topſail braces. |
| 5 ——— brace pendents. | 43 Mizentopſail braces. |
| 6 ——— braces. | 44 Fore-topſail lifts. |
| 7 ——— lifts. | 45 Main-topſail lifts. |
| 8 ——— haliards. | 46 Mizentopſail lifts. |
| 9 Spritsail-topſail braces. | 47 Fore-topſail reef-tackle pendents. |
| 10 ——— lifts. | 48 Main-topſail reef-tackle pendents. |
| 11 ——— haliards. | 49 Fore-topſail tye. |
| 12 Fore-yard horſes and ſtirrups. | 50 Main-topſail tye. |
| 13 Main-yard horſes and ſtirrups. | 51 Fore-topſail haliards. |
| 14 Croſs-jack horſes. | 52 Main-topſail haliards. |
| 15 Fore-yard tackle pendents. | 53 Fore-topgallant yard horſes. |
| 16 Main-yard tackle pendents. | 54 Main-topgallant yard horſes. |
| 17 Fore-yard tackles. | 55 Mizentopgallant yard horſes. |
| 18 Main-yard tackle pendents. | 56 Fore-topgallant brace pendents. |
| 19 Inner tricing-line to the main-yard
tackle. | 57 Main-topgallant brace pendents. |
| 20 Outer tricing-line to the main-yard
tackle. | 58 Fore-topgallant braces. |
| 21 Fore-brace pendents. | 59 Main-topgallant braces. |
| 22 Main-brace pendents. | 60 Mizentopgallant braces. |
| 23 Fore-lifts. | 61 Fore-topgallant lifts. |
| 24 Main-lifts. | 62 Main-topgallant lifts. |
| 25 Tye of the fore-jeers. | 63 Mizentopgallant lifts. |
| 26 ——— main-jeers. | 64 Fore-topgallant haliards. |
| 27 Fall of the fore-jeers. | 65 Main-topgallant haliards. |
| 28 ——— main-jeers. | 66 Mizentopgallant haliards. |
| 29 Nave-line of the fore-truſs pendents. | 67 Fore-royal haliard. |
| 30 ——— main-truſs pendents. | 68 Main-royal haliard. |
| 31 Fore-topſail yard horſes and ſtirrups. | 69 Pendent-haliard. |
| 32 ——— Flemiſh horſes. | 70 Croſs-jack brace pendents. |
| 33 Main-topſail yard horſes and ſtirrup. | 71 ——— braces. |
| 34 ——— Flemiſh horſes. | 72 ——— lifts. |
| 35 Mizentopſail horſes. | 73 Gaſſ-throat haliards. |
| 36 Fore-topſail brace pendents. | 74 Gaſſ-peck haliards. |
| 37 Main-topſail brace pendents. | 75 Vang-pendents. |
| 38 Mizentopſail brace pendents. | 76 Vang-falls. |
| | 77 Boom-topping lift. |
| | 78 Guy-pendent and tackle. |

THE RUNNING RIGGING of a TWENTY GUN SHIP.



A Scale of Feet
 10 20 30 40 50 60 70 80 90 100

The FORE-and-AFT SAILS of a TWENTY-GUN-SHIP.



Scale of Feet
10 20 30 40 50 60 70 80 90 100

Published as the Act directs, by D Steel 1st Sep: 1794.

EXPLANATION OF THE REFERENCES ON THE PLATE DELINEATING THE FORE-AND-AFT SAILS OF A TWENTY GUN SHIP.

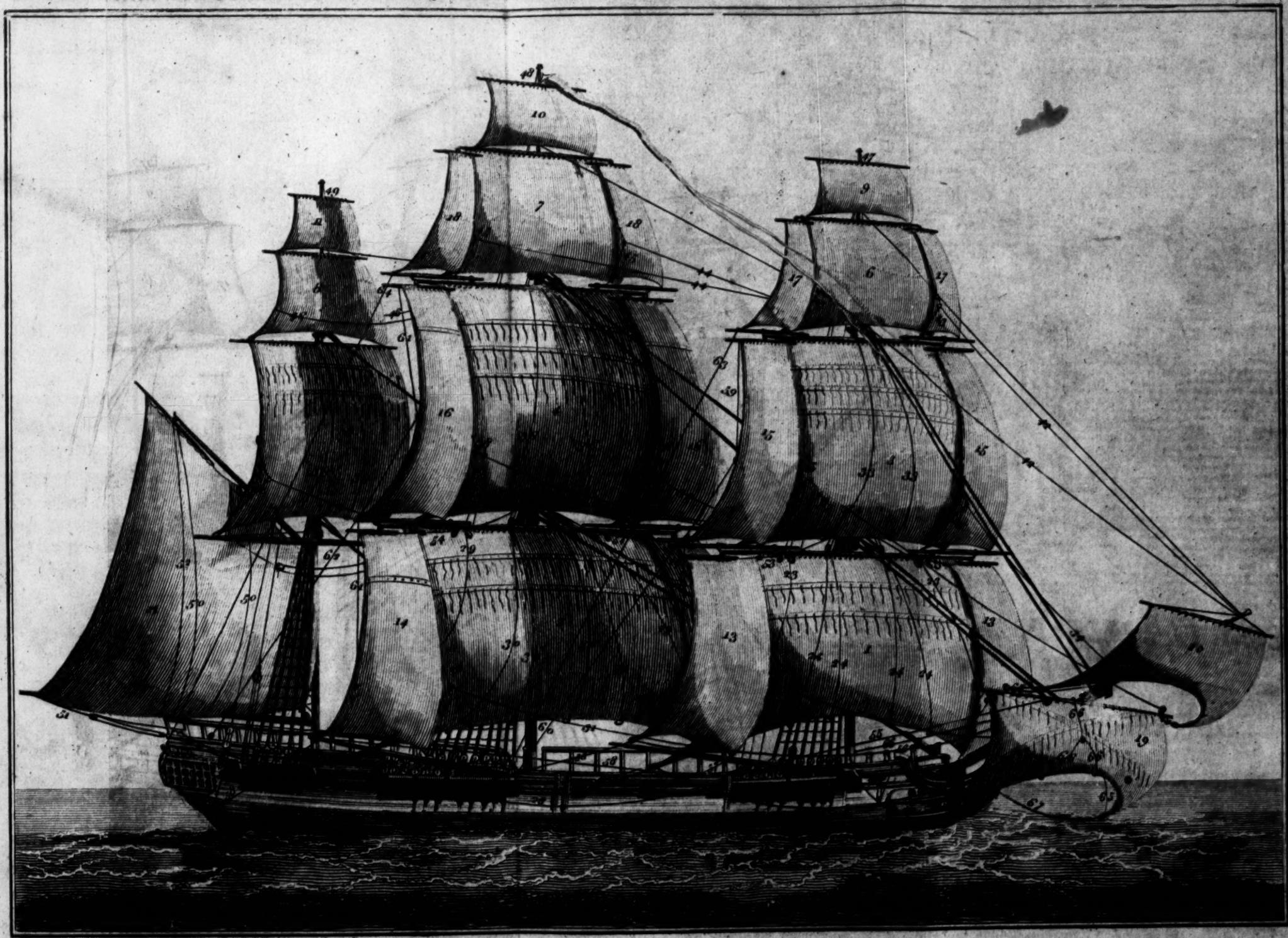
- | | |
|--------------------------------------|---|
| 1 Jib. | 36 Main-topfail stayfail-sheets. |
| 2 Fore-topmast stayfail. | 37 Middle-stayfail stay. |
| 3 Fore-stayfail. | 38 ————— haliards. |
| 4 Main-stayfail. | 39 ————— downhauler. |
| 5 Main-topmast stayfail. | 40 ————— tacks. |
| 6 Middle-stayfail. | 41 ————— sheets. |
| 7 Main-topgallant stayfail. | 42 ————— tricing-line. |
| 8 Mizzen-stayfail. | 43 Main-topgallant stayfail-stay. |
| 9 Mizzen-topmast stayfail. | 44 ————— haliards. |
| 10 Mizzen-topgallant stayfail. | 45 ————— downhauler. |
| 11 Mizzen. | 46 ————— tacks. |
| 12 Jib-downhauler. | 47 ————— sheets. |
| 13 — haliards. | 48 Mizzen-stay. |
| 14 — sheets. | 49 — stayfail-haliards. |
| 15 — stay. | 50 — downhauler. |
| 16 — outhauler. | 51 — brails. |
| 17 — inhauler. | 52 — tacks. |
| 18 Fore-topmast stay. | 53 — sheets. |
| 19 Fore-topmast stayfail downhauler. | 54 Mizzen-topmast stay. |
| 20 ————— haliards. | 55 — stayfail-haliards. |
| 21 — sheets. | 56 — downhauler. |
| 22 — outhauler. | 57 — tacks. |
| 23 Fore-preventer stay. | 58 — sheets. |
| 24 Fore-stayfail haliards. | 59 Mizzen-topgallant stay. |
| 25 — downhauler. | 60 — stayfail haliards. |
| 26 — sheets. | 61 — downhauler. |
| 27 Main-stayfail stay. | 62 — tacks. |
| 28 — haliards. | 63 — sheets. |
| 29 — downhauler. | 64 Tack of the mizen-course. |
| 30 — sheets. | 65 Sheet of the mizen-course. |
| 31 Main-topmast preventer-stay. | 66 Throat-brails |
| 32 — stayfail-haliards. | 67 Middle-brails } of the mizen-course. |
| 33 — downhauler. | 68 Peek-brails |
| 34 — brails. | 69 Fancy-line. |
| 35 — tacks. | |

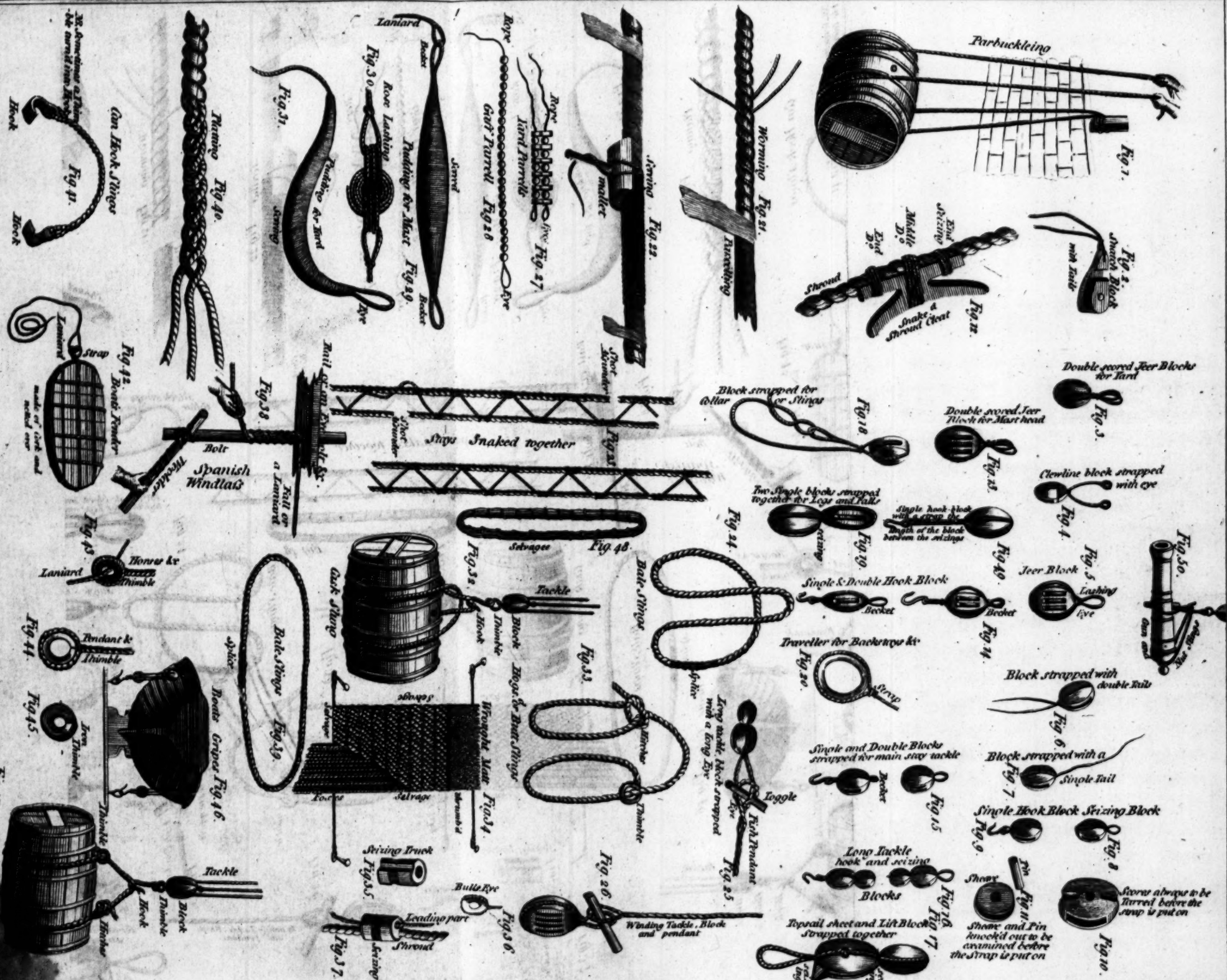
EXPLANATION OF THE REFERENCES ON THE PLATE DELINEATING THE SQUARE-SAILS OF A TWENTY-GUN SHIP.

- | | |
|------------------------------------|--|
| 1 Fore-courfe. | 36 Main-topfail bunt-lines. |
| 2 Main-courfe. | 37 ————— bowlines. |
| 3 Fore-topfail. | 38 ————— bowline-bridles. |
| 4 Main-topfail. | 39 Mizent-topfail bunt-lines. |
| 5 Mizent-topfail. | 40 ————— bowline. |
| 6 Fore-topgallant fail. | 41 ————— bowline-bridles. |
| 7 Main-topgallant fail. | 42 Fore-topgallant bowlines. |
| 8 Mizent-topgallant fail. | 43 ————— bowline-bridles. |
| 9 Fore-royal. | 44 Main-topgallant bowlines. |
| 10 Main-royal. | 45 ————— bowline-bridles. |
| 11 Mizent-royal. | 46 Mizent-topgallant bowline. |
| 12 Driver. | 47 Fore-royal haliards. |
| 13 Fore-studding fails. | 48 Main-royal haliards. |
| 14 Main-studding fails. | 49 Mizent-royal haliards. |
| 15 Fore-topmast studding-fails. | 50 Driver-haliards. |
| 16 Main-topmast studding-fails. | 51 ——— sheet. |
| 17 Fore-topgallant studding-fails. | 52 ——— downhauler. |
| 18 Main-topgallant studding-fails. | 53 Fore-studding fail inner-haliards. |
| 19 Spritfail-courfe. | 54 Main-studding fail inner-haliards. |
| 20 Spritfail-topfail. | 55 Fore-studding fail boom-guy. |
| 21 Forefail-sheets. | 56 ————— tacks. |
| 22 ——— tacks. | 57 ————— sheets. |
| 23 ——— leech-lines. | 58 Main-studding fail tacks. |
| 24 ——— bunt-lines. | 59 Fore-topmast studding-fail down-
hauler. |
| 25 ——— bowlines. | 60 Fore-topmast studding-fail tack. |
| 26 ——— bowline-bridles. | 61 Main-topmast studding-fail down-
hauler. |
| 27 Main-sheets. | 62 Main-topmast studding-fail tack. |
| 28 ——— tack. | 63 Fore-topgallant studding-fail tack. |
| 29 Mainfail leech-lines. | 64 Main-topgallant studding-fail tack. |
| 30 ——— bunt-lines. | 65 Spritfail clew-line. |
| 31 ——— bowlines. | 66 ——— bunt-line. |
| 32 ——— bowline-bridles. | 67 ——— sheets. |
| 33 Fore-topfail bunt-lines. | 68 ——— topfail-sheets. |
| 34 ——— bowlines. | |
| 35 ——— bowline-bridles. | |

RIGGING.

THE SQUARE SAILS and DRIVER of a TWENTY-GUN-SHIP.





RIGGING.

PART III.

PROGRESSIVE METHOD OF RIGGING SHIPS.

THERE is no one undeviating mode which is pursued in the progressive rigging of ships. It is an operation which must at all times depend upon the time allotted for its performance and the necessity of immediate fitting. The nature of it, however, is such, that many parts may be advancing at the same time, but the usual method, where extreme expedition is not required, is the following:

First, rig the bowsprit and the spritsail-yard; then get the lower rigging over the masts. Next, rig out the jib-boom and spritsail-topfail yard, and get up the top-masts and their shrouds: then get on board and rig the fore, main, and cross-jack, yards; then the topfail-yards; get up the topgallant-masts, with their rigging and yards; and, lastly, the mizen.

In the following treatise the rigging is accordingly taken in that order; but, to give a more clear view of the whole, we here prefix a summary of the different operations in their regular and minute progression,

BOWSPRIT. If the wooding is already on the bowsprit, and it is in its place, the first operation is to rig the horses, and then put on the gammoning: proceed to fix the first bobstay-collar, the two shroud-collars, the middle bobstay-collar, and the fore-preventer-stay collar; lash the blocks for the fore-bowlines;

fix the last bobstay-collar; lash the blocks for the fore-topfail bowlines; hitch in their places the spans for the spritsail-lifts, the strap for the standing-lifts, and the span for the fore-preventer braces; then set up the bobstays and the shrouds.

SPRITSAIL-YARD. Heave it on board: then get over the yard-arms the horses and the brace-pendants; reeve the braces; get over the lift-blocks, and reeve the lifts; lash the standing-lifts and clue-line blocks round the yard, and the bunt-line blocks round the bowsprit; seize on the slings and strap; reeve the haliards; and bowse the yard into its place. When the yard is in its place, take in the haliards, and hook on the preventer-slings.

After the bowsprit and spritsail-yard are thus far completed, the next in order is the

FORE-MAST. The woolding being on, the mast must be got in its place, by means of the sheers, with its girt-lines; and therefore lash the girt-line blocks and reeve the girt-lines. When the mast is in its place, clothe the bolsters on the trestle-trees; get over the mast-head the fore-tackle pendants, the shrouds, swifsters, the fore-stay, and fore-preventer stay; get up the cross-trees and the fore-top; turn in the dead-eyes, and reeve the laniards; seize the futtock-staves to the shrouds; set up the shrouds; fasten the ratlings; and sway the cap up into the top.

MAIN AND MIZEN MASTS. Proceed in the same manner with these masts as with the FORE-MAST.

THE JIB-BOOM. The jib-boom, being in the nature of a top-mast to the bowsprit, is next in order; therefore, put on the traveller; rig the horses; put on the guy-pendants, and the strap for the fore-topgallant stay and fore-topgallant bowlines; then set up the martingal-stay.

SPRITSAIL-TOPSAIL YARD. First, heave it on board; get over the yard-arm the horses, braces, and lifts; lash the clue-line blocks; lash the haliard-block between the cleats of the yard, and the other to the outer end of the jib-boom; reeve the haliards; get the yard out, and fix the parral.

FORE-TOPMAST. Heave up the topmast, and fix the cap on the lower-mast head; then get the girt-lines to the topmast-head, and get the cross-trees up into the top; take away the girt-

lines,

lines, and get the topmast cross-trees over the topmast-head; fix the cheek-blocks; lash the girt-line blocks again to the topmast-head, and reeve the girt-lines: clothe the bolsters; get over the mast-head the burton-pendants, shrouds, breast-backstay, after-backstay, and shifting-backstay, the topmast-stay, and preventer-stay: sway up the topmast-cap and fix it: then take down the girt-lines; heave up the topmast, and fid it: put the futtock-plates through the sides of the top, hook on the futtock-shrouds, and seize the lower ends; turn the dead-eyes into the lower ends of the topmast-shrouds; reeve the laniards; set up the shrouds; rattle them down; then set up the backstays.

Proceed with the MAIN and MIZEN TOPMASTS as far and in the same manner as with the FORE-TOPMAST.

Then cast off the shrouds and backstays, in order to set up all the lower-stays; and after them the topmast-stays. When that is done, set up the shrouds and backstays again.

FORE-YARD. The masts are now ready to receive the lower and topsail yards; therefore heave on board, and place, before its mast, the fore-yard. Before it is hoisted in its place, get over the yard-arms the horses and yard-tackle pendants: then seize on the tricing-blocks: get the brace-pendants over the yard-arms, and reeve the braces: put over the yard-arms the topsail-sheet blocks: the lift-blocks are next spliced in the strap of the topsail-sheet blocks, and the lifts rove. The jeer-blocks are now hove to the mast-head and lashed; the other blocks of the jeers are lashed to the slings of the yards; and the falls then reeved: lash on the yard the quarter-blocks, clue-garnet blocks, leech-line blocks, and bunt-line blocks; seize the slab-line blocks to the span of the quarter-blocks; seize the truss-pendants to the yard; and then put on the puddening. Reeve the nave-line: put on the slings and straps; and then hoist the yard to the mast-head.

Proceed in the same manner with the MAIN and CROSS-JACK YARDS.

FORE TOPSAIL-YARD. Heave it on board, and place it for rigging. Get over the yard the horses, Flemish horses, and brace-pendants; reeve the braces; get over the yard-arms the lift-blocks, and reeve the lifts. Reeve the reef-tackle pendants; then

then lash one tye-block to the topmast-head, and the other tye-block to the flings of the yard. Lash on the yard the clue-line blocks and the topgallant-sheet blocks; splice the bunt-line blocks round the strap of the topfail-tye block on the yard; then heave up the yard, and pass the parral round the yard and mast.

Proceed in the same way with the MAIN and MIZEN TOPSAIL YARDS.

FORE TOPGALLANT-MAST. The fore topgallant-mast is then hove up to its place. Put the grommet over the mast-head, then the shrouds, then the backstay and shifting-backstay, topgallant-stay and flag-staff stay. Then sway up the topgallant-mast, and fid it. Set up the shrouds and stays.

Proceed in the same manner with the MAIN and MIZEN TOPGALLANT MASTS, and ROYAL-MASTS, when any.

FORE TOPGALLANT-YARD. Heave it on board. Get over the yard the horses and brace-pendants, and reeve the braces; get over the yard-arms the lifts: reeve the tye through the hounds of the topgallant-mast, and clinch it round the middle of the yard. Lash on the yard the clue-line blocks; sway up the yard, and fix the parral.

MAIN and MIZEN TOPGALLANT-YARDS are proceeded with in the same manner.

The ROYAL-YARDS, when there are royal-masts, rig as topgallant-masts. When no royal-masts, they are set flying; in which case, the haliard is rove, and the yard is got up in its place.

The MIZEN-YARD, or GAFF, is then hove on board. Lash one jeer-block between the cleats, another at the mizen-mast head, and reeve the falls. Lash the derrick-blocks on the yard and mizen-cap, and reeve the derrick-fall. Seize on the brail-blocks; put the vang over the peek-end; reeve the bowlines, and clinch the horse for the sheets; then hoist the yard, and pass the flings.

In smaller ships a gaff is used instead of a mizen-yard: it has a throat-haliard instead of jeers; and a span instead of a derrick.

DRIVER, or SPANKER-BOOM. When hove on board, hitch the topping-lift over the end, and reeve the lifts. Splice the gypendents round the boom, and hook the tackle.

The

The SHROUDS are then set up with their proper daniards.

Thus far is the ship completed, without the sails. The progression of rigging them is as follows:

FORE-COURSE. The ropebands and points being put in on shore, lay the sail athwart, ready for bending. Place the sheet-block, tack and clue-garnet blocks, in the clues. Reeve the sheets, lead the tacks; reeve the clue-garnets, the leech-lines, the bunt-lines, bowlines, and stab-lines. Then, by means of the yard-ropes, run the sail up to the yard. Pass the ear-rings and reef ear-rings; fasten the sail to the yard by the ropebands; and fasten the gaskets to the yard.

The MAIN-COURSE is the same as the FORE-COURSE.

MIZEN-COURSE. Reeve the ear-rings and pass the lacing. Reeve the laniard for the tack, the sheet, the brails, and fancy-line. Then set the mizen, to see that it is clearly bent.

JIB. Reeve the stay at the mast-head; put on the hanks; and clinch the stay to the traveller. Seize the head of the sail to the hanks. Reeve the downhauler, the haliards, the sheets, the outhauler, and inhauler. Run the sail up, to see that it is clear.

FORE-TOPMAST STAYSAIL. Reeve the stay at the mast-head; put on the hanks; and fasten the stay round the bowsprit. Seize the sail to the hanks; reeve the downhauler and haliards; bend the sheets, and reeve the outhauler. Run the sail up, to see that it is clear.

FORE-TOPSAIL. The ropebands and points being in, sway the sail into the top, and lay it fair for bending. Pass the sheets and clue-lines; reeve the bunt-lines, bowlines, reef-tackle pendants, reef ear-rings, and ear-rings. Haul out the sail; and, the yard being lowered, bend it to the yard by the ropebands, and reeve the gaskets. Let it fall, to see that it is fairly bent.

MAIN-TOPSAIL and **MIZEN-TOPSAIL** are the same as the **FORE-TOPSAIL**.

FORE TOPGALLANT-SAIL is either swayed up to the topmast cross-trees, or bent to the yard below. If bent below, the yard and sail are hoisted up by the jack-block. Bend the sheets and clue-lines; reeve the bunt-lines and bowlines. Pass the ear-rings; haul

haul the sail out to the yard, and bend it to the yard by rope-bands or lacing.

MAIN and MIZEN TOPGALLANT-SAILS are the same as the **FORE TOPGALLANT-SAIL**.

ROYALS are set as topgallant-fails, when there is a royal-mast: If not, they are only set flying; in which case, lash the clues, and reeve the haliards and braces.

MAIN-STAYSAIL. Clinch one end of the stayfail-stay round the mast-head; reeve the hanks, and set up the stay; seize the head of the sail to the hanks; reeve the haliards and downhauler; lash the tack; and reeve the sheets. Run it up, to see that it is fair.

MIZEN-STAYSAIL. Clinch the stayfail-stay round the mast-head; reeve the hanks; and set up the stay. Seize the head of the sail to the hanks; reeve the haliards, downhaulers, and brails. Lash the tack, and bend the sheets. Run it up, to see that it is fair.

MAIN-TOPMAST STAYSAIL. Reeve the hanks on the topmast preventer-stay, and seize the sail, in the foretop, to the hanks. Reeve the haliards, downhauler, brails, tacks, and sheets; and then run it up.

MIDDLE-STAYSAIL. Reeve the hanks on the middle-stayfail stay, and set it up; then seize the sail, in the fore-top, to the hanks. Reeve the haliards, downhauler, tacks, sheets, and tricing-line; and then run it up.

MAIN-TOPGALLANT STAYSAIL. Reeve the hanks on the stay, and set it up. Seize the sail, on the fore-topmast cross-trees, to the hanks. Reeve the haliards, downhauler, tacks, and sheets.

MIZEN-TOPMAST STAYSAIL. Reeve the hanks on the mizen-topmast stay. Seize the head of the sail, in the main-top, to the hanks. Reeve the haliard, downhauler, tacks, and sheets.

MIZEN-TOPGALLANT STAYSAIL. Reeve the hanks on the mizen-topgallant stay. Seize the head of the sail, on the main-topmast cross-trees, to the hanks. Reeve the haliard, downhauler, tacks, and sheets.

SPRITSAIL-

SPRITSAIL-COURSE. The ropebands and points being in, while on the forecastle, place the sheet-block and clue-line blocks in the clues. Reeve the clue-lines, bunt-lines, and sheets. Then get it out on the bowsprit, and spread the head of the sail to the yard by the ear-rings. Bend it to the yard by ropebands. Let it fall, to see that it is fair.

SPRITSAIL-TOPSAIL. While on the forecastle, place the sheet-block and clue-line blocks in the clues. Reeve the clue-lines and sheets. Get the sail out to the yard, and spread the head by the ear-rings; bend it either by ropebands or lacing.

DRIVER. The sail being laid ready for bending, bend the haliards to the head of the sail; lace the peek of the sail to the driver-yard, and make fast to the yard the peek-haliard. Reeve the sheet and downhauler. Hoist the sail; make fast the neck-ear-ring; and set the tack.

LOWER FORE STUDDING-SAIL. Bend the outer part of the head of the sail to the studding-sail yard with ropebands. Reeve the outer and inner haliards; bend and reeve the tacks; and lead the sheets. If the fore studding-sail sets flying, it has a yard on the foot.

The **LOWER MAIN STUDDING-SAIL** is rigged in the same manner.

FORE-TOPMAST STUDDING-SAIL. Bend the head of the sail to the topmast studding-sail yard with ropebands or lacing. Reeve the haliards and downhauler. Bend and reeve the tacks; bend and lead the sheets. Spread the foot of the sail on, and run out, the boom.

MAIN-TOPMAST STUDDING-SAIL is rigged similarly.

FORE-TOPGALLANT STUDDING-SAIL. Bend the head of the sail to the topgallant studding-sail yard with lacing. Reeve the haliards and downhauler. Bend and reeve the tacks; then bend and lead the sheets. Spread the foot of the sail on, and run out, the boom.

MAIN-TOPGALLANT STUDDING-SAIL is rigged in the same way.

Having thus shewn, in a summary way, the progress of rigging a ship, we proceed to give particular directions for each operation in the same order.

THE RIGGING OF THE BOWSPRIT.

WOOLDING of the bowsprit is performed on shore, in the manner described under that word in the preceding part.

HORSES. The outer ends are spliced round a thimble closed through an eye-bolt on each side of the upper part of the bowsprit-cap. The inner ends have a thimble seized in, that sets up to the eye-bolt in the timber-head, on each side the stem, by a laniard, passed several times alternately through the thimble and eye-bolt, and set tight by hand: the turns are then frapped together, and the end hitched.

GAMMONING. Nine or eleven turns of the rope are passed over the bowsprit and through a hole cut in the knee of the head alternately; but, where there is no knee, through a large triangular ring-bolt driven through the stem. The first end is whipt and passed through the hole, and over the bowsprit, with a round turn, then clinched round the bowsprit close against the cleats; the other end passes through the fore part of the hole, taking care to cross every turn, and keep each turn forward on the bowsprit and aft in the hole, and every turn is hove tight and nippered. In the navy, the bowsprit is first heaved down by a chain-boat. A selvagee is fastened round the bowsprit, next the saddle for the spritfail-slings, to which a block is hooked, and through it a pendent is reeved, having one end made fast to an eye-bolt in one side of the boat, and a luff-tackle to the other end, whose fall is connected with the windlafs, and heaved tight by handspecks; the fall is then stopped with spunyarn, and taken off the windlafs. Each turn of the gammoning-rope is then heaved tight as above. A leading-block is lashed through an eye-bolt, in the bow of the chain-boat, or round the davit, and a pendent reeved through, with an eye spliced in one end, through which a bight of the gammoning-rope is passed, and retained by means of a toggle. To the other end of the pendent is hooked a luff-tackle, whose fall is connected with the windlafs, and heaved tight as before. The luff-tackle is over-hauled by a small jigger-

jigger-tackle, made fast to the davit-head and strap of the luff-tackle block. In merchant-ships, chain-boats are seldom used. Their own long-boats or casks of water are heaved up to the bowsprit-end, and every turn of the gammoning-rope is connected with the windlafs or capstern on board. A leading-block is made fast through the holes, for the bobstay, with tails, long enough for the pendent and tackle to lead straight through the hawse-holes to the windlafs. The process as before.

When all the turns are passed, and hove tight, they are frapped together in the middle, by as many cross turns as are passed over the bowsprit, each turn hove tight: the end of the gammoning-rope is then whipt, and seized to one of the turns. The frapping increases the tension; and adds to the security acquired by the purchase.

MAIN PREVENTER-STAY COLLAR is prepared on shore, and is lashed under the bowsprit a little within the gammoning. This mode of setting up the main preventer-stay is not often practised; it being usually set up to the lower part of the fore-mast, as mentioned hereafter.

The first **BOBSTAY-COLLAR**, first prepared on shore, is lashed upon the upper side two-thirds out, or within the saddle for the spritsail-slings with eight or ten turns, each turn passing, alternately, through the eyes, and hove tight by a heaver.

The two **SHROUD-COLLARS**, first prepared on shore, are lashed upon each side the bowsprit as the bobstay-collar; but the heart of each is to be kept on the opposite side.

FORE-STAY COLLAR, first prepared on shore, stops against cleats, nailed to the bowsprit, to prevent its coming in, and is lashed under the bowsprit. A stage is made for this purpose, of two long spars, or the topmast studding-sail booms, and a grating. One end of the spars rests upon the gunwale, on each side the bowsprit; and the outer ends are lashed to the bowsprit, and the grating is laid under the collars.

MIDDLE BOBSTAY-COLLAR, being previously prepared on shore, is then lashed on as the first bobstay-collar.

FORE PREVENTER-STAY COLLAR, previously prepared on shore, is then lashed on as the fore-stay collar.

BLOCKS for the fore-bowlines are lashed one on each side of the fore-stay or fore-preventer-stay collar.

LAST BOBSTAY-COLLAR, previously prepared on shore, is then lashed on as the other bobstay-collars, provided three are used; but, if not, the middle bobstay-collar is the last.

BLOCKS for the fore-topfail bowlines are lashed, one on each side, to an eye-bolt in the bowsprit-cap.

SPANS for the spritsail-lifts, prepared on shore, are hitched round the bowsprit-cap, under the jib-boom.

STRAP for the standing-lifts has a thimble spliced in each end, and hitches round the bowsprit within the bees.

SPAN for the fore-preventer-braces, in war, prepared on shore, is hitched round the bowsprit-cap.

When the rigging of the bowsprit is thus far completed, the bobstays and shrouds are set up as follows:

BOBSTAYS. King's ships have two or three pair of bobstays: merchant-ships, according to their size, one or two pair. They are fixed by passing one end through a hole bored in the knee of the head; (merchant-ships, that have no knee, have large triangular bolts driven through the stem, and clenched on a plate of iron inside;) the ends are then spliced together, to make it two-fold, or like the link of a chain. A heart, or dead-eye, is seized in the bight, with a splice at the arse of the heart, the same as the collar; a laniard then passes through, and connects with the heart, or dead-eye, in the collar under the bowsprit, and sets up tight, with a luff-tackle upon luff, and leads in upon the fore-castle. The use of the bobstay is to draw down and keep steady the bowsprit, to counteract the force of the stays of the fore-mast, which draw it upwards.

SHROUDS hook to an eye-bolt on each side of the bow; the fore-mast end has a heart, or dead-eye, seized in, that it may shift nearer in as the rope stretches; the shrouds are then set tight as the bobstay. The shrouds are to fortify the bowsprit, as the fore-mast and upper part of the main-mast are stayed and supported by the bowsprit.

THE RIGGING OF THE SPRITSAIL-YARD.

HORSES, prepared on shore. The eye in the outer end is put over the yard-arm on each side, and stops against the cleats; the other end has an eye spliced in and seized to the yard three feet beyond the flings. The horses hang three feet below the yard. To keep horses more parallel to the yard, they are suspended at proper distances by ropes, called

STIRRUPS, prepared on shore, two or three on each side the flings, having a thimble or eye spliced in their lower ends. They hang three feet below the yard, through which the horse reeves. The upper ends are open and plaited, to lie flat to the yard: they have three turns round the yard, and are nailed. A Flemish horse is used at each arm of the yard, having an eye spliced in each; one eye is put over the bolt in the yard-arm, the other seized within the cleats.

BRACES and **PENDENTS**, prepared on shore. The eyes of the pendants are spliced in one end. They go over the yard-arm, and the brace reeves through the single block spliced in the other end, connecting them with a double block, made fast under the fore-top, and then leads through another, made fast at the aft-part of the top, and down to the breast-work at the aft-part of the forecastle, and the standing-part is made fast to the stay-collar.

LIFTS. The blocks are strapped with an eye to the size of the yard-arm, and put neatly over the yard-arm: after which one end of the lifts reeve through the single block in the span at the cap, then through the lift-block on the yard-arm. The standing-part is made fast to an eye-bolt in the cap, and leads in upon the forecastle; they are used for the spritsail-top-sail sheets, and to keep the yard level, or to raise one yard-arm higher than the other, and support the weight when a number of seamen are employed to furl or reef the sail. When the lifts are not used as sheets, they hook to a thimble in the becket, hitched round the bowsprit-cap.

The **STANDING-LIFT** has an eye spliced in one end, and lashes to the yard one-fourth from the flings; the other end has a thimble

thimble spliced in, and is set up with a laniard to a thimble spliced in a strap that goes round the bowsprit within the bees.

CLUE-LINE BLOCKS are strapped, with two eyes, and are lashed through those eyes, round the yard, three feet without the slings; the lashing to be upon the yard.

BUNT-LINE BLOCKS lash round the bowsprit, near the yard, just before the spritsail-slings. Small ships have a strap and thimble.

SLINGS. One end has an eye, and goes round the yard close within the cleats in the middle, and seizes with a quarter-seizing close to the yard; the other end goes over the bowsprit before the saddle, and under the yard, then over the bowsprit again, and an eye is spliced in the end, that comes close to the other eye, and lashes.

STRAP, with a thimble seized in its bight, is spliced or seized round the yard in the middle, between the cleats. The single block of the haliards hooks in the thimble, and is moused with spun-yarn round the hook, to prevent its slipping. The long-tackle block is hooked, and moused, to an eye-bolt in the after-part of the bottom of the cap, and the fall leads in upon the fore-castle, and belays to the rack over the bowsprit. Also, on each outer-quarter of the yard, is seized a strap, with a thimble, through which are led the jib-guys.

PREVENTER-SLINGS are used when the haliards are taken in. The outer end has a hook and thimble spliced in and served down, that hooks to the eye-bolt in the bottom of the cap. The inner end reeves through the thimble in the above strap, and is hitched with two half-hitches, or spliced.

THE RIGGING OF THE FORE, MAIN, AND MIZEN, MASTS.

WOOLDING of the masts is performed on shore, in the manner described under that word in the preceding part.

GIRTLINE-BLOCKS are prepared on shore; and, before the mast is got in its place, are lashed, one round the mast-head, above the stop of the cap, and one round the trestle-trees, in the score of the cross-trees. This latter block is, when the mast is stepped, shifted opposite the other. The girtlines that reeve through them

lead

lead down upon deck, for hoisting the rigging, tops, and cross-trees, and the persons employed to place the rigging, over the mast-head.

BOLSTERS, on the trestle-trees, are clothed with old canvas, several times doubled, and tarred.

PENDENTS of TACKLES, prepared on shore, are got over the mast-head, and fixed, that the thimbles, to which is lashed the block for the runner, may hang one on each side of the mast; but burtons are used to the mizen-mast, instead of pendants of tackles.

SHROUDS, prepared on shore, are hoisted over the mast-head. The first pair leads down on the starboard-side forward, the next pair forward on the larboard-side; then the second pair on the starboard, and the second on the larboard, and so on till the whole are fixed. By this method, the yards are braced to a greater degree of obliquity, when the sails are close-hauled, which could not be, were the foremost shrouds last fitted on the mast-head.

SWIFTERS, prepared on shore, are swayed over the mast-head, next above the shrouds; and are fixed on the starboard and larboard sides of the mast. They are extended from the mast-head to the starboard and larboard sides of the ship, to support the masts, and enable them to carry sails, &c.

The **STAY**, first prepared on shore, is hoisted over the mast-head, and supports the mast on the fore-part, by extending from its upper end towards the fore-part of the ship: it is set up after the topmast is in its place.

The **PREVENTER-STAY**, prepared on shore, is next hoisted over the mast-head, the same as the former.

The **CROSS-TREES** are then hoisted into their places, and bolted on the trestle-trees, which are fore-locked underneath.

The **TOP** is next got over the mast-head, by the girtlines. Four holes are bored through; one in the middle of the square hole on each side, and two in the fore-part, four inches on each side the middle of the top, except the mizen-top, which is bored in the aft-part. The top is hoisted on board by the girtlines, and placed up against the aft-side of the mast, except the mizen, which is to be placed on the fore-side. The girtline is made fast to the top,

top, for hoisting it over the mast-head, as follows: Reeve one end of each girtline through the hole by the middle of the square hole, and take a whole round turn round the sides of the top; make it fast to the standing-part, with two half-hitches, and stop it with spunyarn through the midship-holes in the fore-part, except the mizen-top, which is stopt at the aft-part. The girtline at the next mast-head is made fast to the aft-part of the main and fore top and fore-part of the mizen-top. The top is then hoisted by its girtlines over the mast-head, and guyed clear of the trestle-trees by the girtline from the next mast-head. When it bears against the mast-head, the stops are cut, and the top is swayed up till it goes over the mast-head and falls to its place.

DEAD-EYES are then turned into the lower end of the shrouds, left-handed, (being cable-laid rope,) with a throat-seizing clapt on close to the dead-eye, and above that a round-seizing, crossed, and the end of the shroud whipt with spunyarn, and capped with canvas well tarred.

LANIARDS are reeved through the dead-eyes: the end of the laniard is thrust through the after-hole of the upper dead-eye, and stopt with a walnut-knot, to prevent its slipping; the other end is passed through the after-hole of the lower dead-eye, and, returning upwards, is conveyed through the second hole in the upper dead-eye, and next through the second hole in the lower dead-eye, and, finally, through the third hole in both dead-eyes. The end of the laniard, being directed upwards from the lower dead-eye, is set up by the runner and tackle, which hooks in the runner-pendent; a luff-tackle is also hooked to a selvagee in the shroud, and the lower-part hooked to the laniard with a cat's paw, and bowfed tight: the fall is then made fast to the hook of the runner with another cat's paw; the runner is swayed up very tight, and the laniards are then nipped together with a strand or rope-yarn. To make the whole slide with ease through the holes in the dead-eyes, it is smeared with tallow, that all the turns may bear an equal proportion of the strain. When the shrouds are set up for a full due, (which is when the mast is stayed forward and the stays all set up,) the laniard is nipped, or stopt, as before-observed, and the end passed betwixt the throat-seizing and the dead-eye, with a hitch, then brought round all the parts,

parts, in turns, to expend the laniard, and the end is well stopt to the shroud with spunyarn. It is customary to set up the shrouds the first time with temporary laniards of worn rope and spunyarn-seizings; and with the proper laniards and seizings, when set up the last time for sea.

FUTTOCK-STAVES are seized along the lower shrouds horizontally, as much below the upper-side of the trestle-trees as the cap is above. The shrouds are then swiftered together, viz. a spar is lashed to the outside of the shrouds about six feet below the futtock-stave; a single block is then lashed round each shroud and spar, (except the fore and after shrouds,) so that all come in together: the swiftening-line is then reeved through each block, from side to side, beginning in the middle, one end leading aft, the other forward; it then crosses, and reeves through two leading-blocks, one on each side the deck, and is bowfed tight till the shrouds come into the length of the catharpin-legs, which are seized at each end, round the futtock-stave and shroud.

RATLINGS are fastened horizontally to the shrouds, at regular distances, from the futtock-staff downwards; and small spars or boat-oars are seized to the shrouds, about five feet asunder, for the men to stand upon. The first ratling to be thirteen inches below the futtock-staff on the lower shrouds. The ratlings are fastened round each shroud with a clove-hitch, except at the ends, which have an eye spliced in and seized round the shroud. Each ratling is placed thirteen inches asunder. The fore and aftermost shrouds are left out for the first six ratlings down from the futtock-staff; and likewise the six lower ratlings next the dead-eyes. The top-mast-shrouds are rattled in the same manner; the first ratling thirteen inches below the futtock-staff, and rattled throughout. The swifters on the lower shrouds are then removed lower down, half way between the dead-eyes, and bowfed tight, there to remain.

The **CAP** is next swayed up into the top by the girtlines.

THE RIGGING OF THE JIB-BOOM.

The **TRAVELLER**, or round iron hoop, is first put over the outer end of the jib-boom, with a hook and shackle; the hook is kept inwards, to hook the tack of the jib to.

HORSES, prepared on shore. The bight is taken over the jib-boom with a jamming-knot, and rests against a shoulder, made in the end of the jib-boom, to prevent its coming in. The inner ends are brought in, and made fast with a round turn round the jib-boom, within the cap. The ends are stopt back with two or three seizings of spunyarn, to prevent their being cast off by mistake.

GUY-PENDENTS, prepared on shore, are put over the jib-boom, the same as the horses, and the inner ends reeve through a thimble, on the quarters of the spritsail-yard, and turn into the strap of a double block, with a throat and round seizing, which is connected, by its fall, to a single block, that hooks to an eye-bolt, near the cat-head, and leads in upon the forecastle.

A **STRAP** is put over the end of the jib-boom, with three thimbles seized in it; the middle thimble is the largest, which the fore-topgallant stay reeves through, and the smaller thimble on each side has the fore-topgallant bowlines reeved through.

The **MARTINGAL-STAY** is then set up, in the manner directed in the preceding part under that word.

THE RIGGING OF THE SPRITSAIL-TOPRAIL YARD.

HORSES, prepared on shore. The eye in the outer ends is put over the yard-arm on each side, and stops against the cleats; the other end has an eye spliced in it, and is seized to the yard, three feet without the slings.

BRACES, prepared on shore, have an eye spliced in one end, that goes over the yard-arm on each side; the other end leads through a block made fast to the under-side of the fore-top, from that through another block, made fast under the aft-side of the top, and down to the aft-part of the forecastle, and is there belayed.

LIFTS, prepared on shore, have an eye spliced in one end, that goes next over the yard-arm; the other end leads through a thimble, seized on each side a strap that goes over the jib-boom end, and leads in upon the forecastle, through a saddle on the bowsprit for leading in the running-ropes, and belays to the rack over the bowsprit.

CLUB-

CLUE-LINE BLOCKS are strapped with two eyes, and are lashed through those eyes round the yard, about two feet without the slings.

HALIARD. One end reeves through a block, lashed under the outer-part of the jib-boom; then through a single block, lashed round the middle of the yard between the cleats; then forward; and is made fast with a bend, through the becket of the block, at the jib-boom ends. The leading-part leads in upon the fore-castle, and belays to the rack over the bowsprit.

PARRAL. Both ends of the parral-rope pass under the yard, and over the jib-boom, contrary-wise; they are then seized through the eyes, close in the cavity on the back of the ribs,

THE RIGGING OF THE TOPMASTS.

The **GIRTLINES** are now taken down from the mast-head, and one of the top-blocks is securely lashed round the mast-head below the cap. The end of a hawser then leads up from aft outside the trestle-trees, and reeves through the top-block at the mast-head, then leads down inside the fore-part of the trestle-trees, and reeves through the sheave-hole in the heel of the topmast, and is racked to the topmast in two or three places between the heel and the hounds. It is there well stopt with lashing, of three-quarters of an inch, and enough of the end left to make fast round the mast-head. The other end of the hawser is conveyed to the capstern through a snatch-block that is lashed fast to the bitts at the aft-part of the mast. When the topmast is hove high enough to enter the trestle-trees, the end of the hawser is made fast round the mast-head. The men in the top stand ready to place the cap over the head of the topmast, and stop it with lashing, a little below the hounds, in a secure manner. The topmast is then hove high enough for the cap to enter over the lower mast-head, and then lowered a little, and the cap beat down firmly on the mast-head with mallets, when the lashing is taken off. This method is used in ships where the cap is too heavy to be got over the mast-head by the hands in the top. As the topmast is elevated the rackings are cut.

The cap being firmly fixed on the lower mast-head, the top-rope pendent is reeved through an iron-bound block, hooked through an

eye-bolt on one side of the cap, then downwards, and reeved through a hole with a sheave in the heel of the topmast, and brought upwards on the other side of the mast, and made fast to an eye-bolt in the cap on the opposite side the top-block. To the lower end of the top-rope pendent is hooked, through the thimble, the block of the top-tackle, connected, by its fall, to a block hooked to an eye-bolt in the deck, and brought to the capstern. The topmast cross-trees are swayed up into the top with the girtline, and got over the topmast-head by the men in the top; and the check-blocks bolted to the topmast-head. The girtline-blocks are again lashed to the topmast-head, as they were to the lower mast-head, and the girtline reeved through, that one part may lead down by the side of the mast, and the other part abast the top.

BOLSTERS are clothed as the lower ones.

BURTON-PENDENTS, prepared on shore, are hoisted by the girtlines, and placed over the topmast-head, that the thimbles may hang on each side, to hook the burton-tackles in.

SHROUDS, prepared on shore, are swayed and placed over the topmast-head; the first pair to lead down on the starboard-side forward, the next pair on the larboard-side forward; and so with the other two pair.

BACK-STAYS, prepared on shore, are hoisted and placed over the topmast-head; the breast back-stay first, and the standing back-stays next.

STAYS, prepared on shore, are swayed and placed over the topmast-head; the stay first, and the preventer-stay next.

TOPMAST-CAP is next swayed up by the girtlines into the top, and got upon the topmast-head by the men in the top, and beat down firm. The girtlines are unlashd and taken down, and the topmast hove up and fidded.

FUTTOCK-PLATES are put through the holes in the edge of the top.

FUTTOCK-SHROUDS, prepared on shore, are furnished with iron hooks, in the upper ends, that hook to a hole in the lower ends of the futtock-plates; and the lower ends of the futtock-shrouds are attached to the lower shrouds, with a round turn round the futtock-

staff

staff and shroud, and seized upon the standing-part of the shroud with two seizings crossed.

When the rigging is thus far completed, it is set up, &c. as follows:

DEAD-EYES are turned into the lower ends of the topmast-shrouds, as the lower ones are in the lower-shrouds.

LANIARDS are reeved through the dead-eye in the shrouds and the dead-eye in the futtock-plate, as the lower ones, and set up with the top burton-tackles. The topmast-shrouds are to secure the topmast, and the futtock-shrouds receive equal tension, by means of the futtock-plates passing through the top, and connecting with the futtock-shrouds below.

RATLINGS as the lower-shrouds.

The **BREAST-BACKSTAY** has a single block turned into the lower end, with a throat and round seizing, through which the runner is reeved.

One end is made fast to the chain-plates, abreast the mast, with a half-hitch, and the end seized down. In the other end is spliced a double block, connected by its fall to a double block that is strapped with an eye, through which a span is reeved, that has an eye spliced in each end, by which it is lashed to the chain-plates.

AFTER-BACKSTAYS are set up the same as a shroud, to a small dead-eye in the after-end of the channel.

SHIFTING-BACKSTAYS are clenched round the topmast-head, and a thimble spliced in the lower end, to which is hooked a tackle, the lower block of which is hooked to an eye-bolt without-board, and frequently shifted from place to place.

BACK-STAYS are extended to the channels on each side, and are to support the topmasts, and assist the shrouds, when the mast is strained by a weight of sail.

LOWER-STAYS are thus set up: The shrouds and back-stays are first cast off, and the mast-head got as far forward as nearly to touch the fore-part of the partners, by the runners and tackles, or burtons, of the mizen-mast. The fore-pendants are frapped together abaft the fore-mast; the runners are passed round the bowsprit with a round turn, and hitched with the bight seized. The falls of the runner-tackles then lead in upon deck through a block

lashed

lashed round each knight-head, and swayed upon by the people on deck.

MAIN-PENDENTS are frapped together abaft the main-mast, and the runners made fast round the cable-bitts, similar to the fore-mast.

The tackles hook to eye-bolts in the deck, and the falls lead aft.

MIZEN-BURTONS are brought to the fore-brace bitts, as the runners are to the cable-bitts.

The **FORE-STAY** has a heart turned in the lower end with a throat-seizing, and two round-seizings above, and the end of the stay capped with canvas, whipped and tarred, then set up with a laniard, that reeves alternately through the heart in the stay and the heart in the fore-stay collar on the bowsprit. The first four turns lie in scores cut in the hearts, and are tallowed, that the strain may be immediately given to all the turns at once. The laniard is then strained tight by tackles, thus: The upper block of a luff-tackle is hooked to a selvagee fastened round the stay, and the lower block is hooked with a cat's paw to the laniard: then the outer block of another luff-tackle is hooked with a cat's paw to the fall of the other tackle, and the inner block hooked where most convenient. The fall leads in upon deck, and is swayed by all hands. Then two of the turns are stopt together with a rope-yarn to prevent their coming up, and more turns taken, and hove on, as before, till the laniard is expended: the end is then well stopped.

The **PREVENTER-STAY** is set up the same as the fore-stay.

The **MAIN-STAY** sets up as the fore-stay, to a heart seized in the bight of the main-stay collar above the bowsprit-chock.

The **COLLAR** reeves from the starboard-side through a large hole in the standard in the head, (or a large triangular eye-bolt is driven through the stem in some merchant-ships,) then reeves through the eye in the other end, and is brought down to its standing-part, and securely seized and crossed in two or three places, and the end capped; the heart is then seized in the bight.

The **MAIN-PREVENTER STAY** sets up as the fore-stay, to a heart seized in the bight of the main-preventer stay-collar, which lashes round the fore-mast, on the fore-side, through two eyes, or

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through a large eye-bolt in the head, the same as the main-stay collar.

The MIZEN-STAY leads down from the mast-head through a thimble, seized in the collar, lashed round the main-mast twelve feet up from the deck. It has an eye spliced in each end, and lashes in the fore-side of the mast. A thimble is turned in the end of the stay, after it is reeved through the collar, and set up with a laniard, reeved four or more turns, alternately, through the thimble in the stay, and an eye-bolt in the deck, that is parcelled and served. The laniard is set tight by the main-runners, and cat's-pawed, as much as is required to stay the mast; two of the turns are then stopt together with a rope-yarn, the length of the laniard expended, and the end made fast with a hitch, and seized.

The FORE-TOP and FORE-TOP-PREVENTER STAYS set up through the bees of the bowsprit, thus: A block with a sheave in it is fixed under the holes in the bees, on each side, through which the stay passes; then a long tackle-block is turned into the ends, which is connected by its fall to a single block hooked to an eye-bolt in the bow, on each side, and is set up with a luff-tackle, cat's-pawed to its fall. The luff-tackle fall leads in upon the fore-castle, and is swayed upon by the men. When the stay is set up, the parts of the tackle are stopt together with a rope-yarn, and the fall of the long-tackle is passed through the eye-bolt and arse of the block, alternately, till it is expended. The end is then made fast, round all the parts, with two half-hitches.

The MAIN-TOPMAST STAY reeves through a single block, strapped with a long and short leg; the short leg has an eye spliced in it, and fastened round the foremast-head above the rigging; the long leg goes round the mast, and through the eye of the short leg, and is turned back and seized. The stay, having a thimble turned in the lower end, leads down between the catharpins and the mast. It sets up with a laniard to an eye-bolt in the deck, close abaft the mast, with a luff-tackle hooked to a selvagee, fastened to the stay.

The PREVENTER-STAY reeves through a thimble, seized in the bight of the collar, that lashes at the fore-part of the fore-mast, close

close up to the bibs, through the eyes, spliced in the ends of the collar, and then sets up to an eye-bolt, as the topmast-stay.

The **MIZEN-TOPMAST STAY** reeves through a thimble, seized in the bight of the collar, that lashes at the fore-part of the main-mast, close up to the bibs; a thimble is then spliced in the ends of the stay, which sets up through another thimble (with a laniard) that is spliced in another collar, lashed round the mast as the former, just below the catharpins, with the top-burton tackle cat's-pawed to the laniard. If with a long pole-head, the same as a topgallant-mast.

The **SHROUDS** are again set up.

THE RIGGING OF THE LOWER-YARDS.

LOWER-YARDS are rigged as follow: One end of the hawser that hove up the topmast is made fast round the yard with a round turn and two half-hitches, securely stopt with spunyarn along the yard, in several places, and well stopt at the upper yard-arm. As it is hove on board, the stops are cut, and the runner-tackle of the opposite side is brought on to the quarter of the yard, to lower it easy, as the yard advances aboard beyond the middle or slings. The yards are placed square athwartships, before their respective masts. The fore-yard must be kept above the main-stay by the runners, which are made fast round each outer quarter of the yard.

HORSES, prepared on shore, go over the yard-arms with an eye in their outer ends, and stop against the cleats, and hang about three feet below the yard. To keep the horse more parallel to the yard, it is suspended, at proper distances, by ropes, called stirrups, prepared on shore, that have thimbles or eyes spliced in their lower ends, through which the horses pass; they are four on each side, and hang three feet below the yard, and the upper ends are opened, plaited, and fastened to the yard with three round turns and nails. The inner ends of the horses have a thimble turned in, Pl. III. fig. 43, with a throat and round seizing; they lash to the yard, on the opposite side of the cleats, with a laniard that passes round the yard and through the thimble.

YARD-

YARD-TACKLE PENDENTS, prepared on shore, are next put over the yard-arm, with an eye, as the former. In the lower end is spliced a double block, connected by its fall to a single one, strapped with a hook and thimble, to hoist in the boats, &c. Pl. II. fig. 20.

TRICING-BLOCKS, for the yard-tackles, are strapped with a short lashing-eye, that seizes round the yard about one-third the length within the arm-cleats. The blocks to hang under the yard.

The **INNER TRICING-LINE** reeves through a block lashed to the futtock-staff; has a long eye spliced in the outer end, that reeves through the hook of the single block of the yard-tackle; the bight is put over the hook with a couple of turns, and the leading-part belays to the shrouds. At sea, the hook is hooked to a becket, or strap, round the futtock-staff.

The **OUTER TRICING-LINE** is spliced round the strap of the yard-tackle block, and reeved through a block on the yard; Pl. II. fig. 20; then leads into the shrouds, and reeves through a block lashed to the shrouds, near the futtock-staff, and down upon deck.

BRACE-PENDENTS, prepared on shore, are next put over the yard-arms with an eye, as above; in the lower end is a single block, through which the brace reeves. Sometimes, in the navy, and oftener in the merchant-service, the block is lashed to the yard-arm without a pendent. Pl. III. fig. 20.

FORE-BRACES reeve through the pendent-block; the standing-parts make fast round the collar of the main-stay, on each side, with a hitch, and the end seized. The leading-part reeves through a single block, lashed on each side the main-stay collar, close up to the rigging, then leads down, and passes through a sheave in the bitts, at the fore-part of the quarter-deck, and there belays. — Brigs lead the same.

MAIN-BRACES reeve through a single block in the pendent; the standing-part makes fast with a clinch round an eye-bolt in the upper part of the quarter-piece; the leading-part reeves through a snatch-block close aft upon the gunwale, and belays round a cleat on the inside.

SPAN FOR MAIN-BRACES has two legs, with a thimble spliced in the end of each leg, which reeves the standing and leading part of the brace, and the span makes fast with a half-hitch, and the end seized up round the mizen-shrouds.

PREVENTER-BRACES, in war, are reeved through a block lashed round the yard-arm, and through a block in a span, round the bowsprit-cap; they then lead in upon the forecastle, and the standing-parts make fast round the cap. The main-brace reeves through the block on the yard-arm, then through a block lashed to the fore-shrouds, close below the catharpins; they then lead down upon the forecastle, and the standing-part makes fast to the shrouds above the block with a hitch, and the end seized. — Brigs reeve the same.

TOPSAIL-SHEET BLOCKS are next put over the yard-arms, strapt with an eye the size of the yard-arm. Pl. II. fig. 20, and Pl. III. fig. 17.

LIFT-BLOCKS are next spliced into the strap of the topsail-sheet blocks: the lifts reeve through the block in the span hitched round the cap between the mast-head and the topmast, then lead down abreast the shrouds, and reeve through a block fastened to the side, and are there belayed. Pl. II. fig. 20, and Pl. III. fig. 17.

JEARS, in large ships, are two large tackles. Pl. II. fig. 20. The hanging-blocks at the mast-head are hove up close on each side by the top-burton tackles, and lashed. A broad elm cleat is nailed on each side the mast-head, above the blocks, as a stop for the lashing. Every turn of lashing is alternately passed through the strap of the block, and over the cleat on the opposite side, and the ends of the lashing are well stopt. The other two blocks are strapt with a double strap to the size of the yard, with a long and short leg. They lash on each side of the middle, or slings, within the cleats. The long leg of the strap goes down the aft-side of the yard, and meets the bight of the short leg on the fore-side, and lashes, every turn passing alternately through each bight, rose-fashion. Pl. III. fig. 30. The blocks, at the mast-head and on the yard, are connected by their falls, which lead upon deck.

JEARS,

JEARS, in merchant-ships, and small ships of the navy, have two single blocks lashed on each side the mast-head, as above, and another, the same size, in the middle of the yard. The tye, which connects with these blocks, reeves through one of the blocks at the mast-head, then through the block on the yard, and afterwards through the block on the other side the mast-head. In the lower ends of the tye is spliced a double block, which is connected by its fall to a treble block, that hooks to an eye-bolt in the deck, close to the mast, on each side. By this the power of the tackles below is communicated to the tye, which, connecting with the block upon the yard, easily sways it up or lowers it down.

QUARTER-BLOCKS are strap with a long and short leg, with a lashing-eye spliced in the ends, and lash to the yard within the cleats, in the middle of the yard, the block hanging downwards. The long leg comes up the aft-side, and meets the short leg on the fore-side, and there lashes through the eyes. Through these blocks reeve the topfail-sheets and clue-lines. Pl. II. fig. 20.

A quarter-block is a double-block, with a thick and thin sheave running on the same pin; and, though used for the topfail-sheets, and intended for the clue-lines, a single block would be cheaper and better, as the thin sheave is seldom used for the clue-line, it being found to impede rather than facilitate. Small ships, in the merchant-service, have a double-block lashed in the middle of the yard, as the quarter-block, through which the sheets reeve, and lead down on opposite sides. Large ships, in the merchant-service, have a single-block lashed on each side the middle of the yard, and the sheets reeve on their respective sides, and lead down by the mast.

CLUE-GARNET BLOCKS lash through the eyes upon the yard, the blocks hanging underneath, four feet without the middle-cleats on each side. Pl. II. fig. 20.

LEECH-LINE BLOCKS are lashed round the yard and through the eye of the strap, ten feet within the cleats on each yard-arm. The blocks to hang on the fore-part of the yard. Pl. II. fig. 20.

BUNT-LINE BLOCKS are lashed as the former in the middle, between them and the slings of the yard. Pl. II. fig. 20.

SEAB-LINE BLOCKS are strapt with a short lashing-eye, that seizes to the span of the quarter-blocks underneath the yard.

TRUSS-PENDENTS, prepared on shore; the ends that have the thimbles in are passed round the yard within the cleats on each side the middle, or slings, and are well seized. One end passes over the yard, the other under, and both ends round the mast. The starboard end reeves through the larboard thimble, and the larboard end through the starboard thimble. In the lower end is a double-block turned in, with a throat and round seizing, connected by its fall to a double-block, that hooks to an eye-bolt in the deck, on each side the mast, by which the truss-pendent is slackened or straightened, to let the yard move from, or confine it strictly to, the mast.

PUDDENING is then put on. This is described in the preceding part under the word *Puddening*.

NAVE-LINE reeves through a single-block, lashed under the aft-side of the top, and through a block or thimble seized to the truss-pendents, up again, and makes fast round the trestle-trees. The leading-part goes down upon deck.

SLINGS and **STRAPS**, prepared on shore. The long leg of the strap passes down the aft-side of the yard, comes up the fore-side, meets the short leg, and lashes through the eyes; the strap being placed exactly in the middle of the yard, and the thimble upwards.

SLINGS have a long and short leg, and a large thimble seized in the bight. The long leg passes round the after-part of the mast, and reeves through the eye in the short leg; it is then brought back, and securely seized to its own part in several places. The yard is then hoisted, and retained at the mast-head with a lanard, that splices in the thimbles in the slings, at the fore-part of the mast, and then reeves through the thimble in the strap upon the yard, and so alternately till the lanard is expended. The end then fraps round the turns, and makes fast with two half-hitches. In time of action, the yards are slung with **CHAINS**.

THE RIGGING OF THE CROSS-JACK YARD

Is hove on board the same as the other yard, and rigged as follows:

The HORSES, BRACES, LIFTS, and TOPSAIL-SHEET BLOCKS, go over the yard-arm the same as on the other lower yards.

A QUARTER-BLOCK is strap with a double strap, with an eye in each of the four ends, and is lashed upon the yard in the middle, between the cleats.

BRACE-PENDENTS, prepared on shore, are stopt to the yard about four feet within the cleats at the yard-arm; the brace then reeves through the block in the pendent. The standing-part of the starboard-brace makes fast to one of the middle shrouds on the larboard-side with a hitch, and the end stopt; and the leading-part reeves down through a single-block lashed to the same shroud a little below the catharpins; it then leads through a truck or double-block seized to the middle shroud, and belays round a pin in the life-rail, and the larboard braces the contrary.

LIFTS, running. Running-lifts reeve through a block in a span hitched round the mizen-cap, and through the block upon the yard. The standing-part is carried up, and makes fast round the cap, and the leading-part leads upon deck.

LIFTS, single, are spliced through the strap of the topsail-sheet block, and the other end is carried up, then hitched and seized to an eye-bolt on each side the mizen-cap.

TRUSS-PENDENTS, prepared on shore, the same as those for the main and fore yards.

The YARD is hoisted into its place by luff-tackles, hooked to the strap, and the

SLINGS and STRAPS, as the lower yards of the fore and main masts.

THE RIGGING OF THE TOPSAIL-YARDS.

The TOP-ROPE is fastened to the slings of the yard, and stopt thence to the yard-arm, by which it is hove on board, and placed for rigging as follows:

First,

First, The HORSES are the same as the lower-yards, the addition of Flemish horses excepted, (the lower-yards having none.) They have an eye spliced in each end; one eye is put over the eye-bolt in the yard-arm, and the other eye is seized round the yard within the arm-cleats.

BRACE-PENDENTS, prepared on shore, are next put over the yard, as on the lower ones. Pl. II. fig. 21. The fore-top-sail braces reeve through the block in the pendent, and then through a block lashed on each side the collar on the main-stay, a little below the fore-braces; the standing-part makes fast to the stay below the block with a hitch, and seized. The leading-part leads from the block upon the collar of the stay through a block lashed on the stay, a-breast the fore-hatchway, and through a block strapt with a thimble into an eye-bolt in the aft-part of the fore-castle, and belays round an iron pin in the boat-skid.

MAIN-TOPSAIL BRACES reeve through the block in the pendent, and the standing-part makes fast to the collar of the mizen-stay. The leading-part reeves through a block in the span round the mizen-mast head below the hounds, and leads down through a sheave-hole in the mizen-top-sail sheet-bitts, abaft the mizen-mast, and belays there.

MIZEN-TOPSAIL BRACES reeve through the block in the pendent. The standing-part makes fast round the peek-end, and the leading-part reeves through single-blocks at the peek, and comes down to the fore-side of the taffarel.

LIFT-BLOCKS are strapt with an eye to the size of the yard-arm. Pl. II. fig. 21. The lift reeves through the lower-sheave in the sister-block in the topmast-shrouds, and through the block on the yard-arm. The standing-part hooks to a becket round the topmast-cap, and the leading-part leads down the side of the mast, and belays to the dead-eyes in the lower-shrouds.

REEF-TACKLE PENDENTS reeve through the upper-sheave in the sister-block in the topmast-shrouds, thence through the sheave-hole in the yard-arm, and are stopt with an overhand-knot, till the sail is bent. In the lower ends of the pendants a double-block is turned in, connected by its fall to another double-block, that is seized

seized to the after-part of the lower trestle-trees, and the ends of the falls lead down upon deck.

TYE-BLOCKS lash at the topmast-head close up to the rigging, under the collar of the stay, as the lower ones; and the blocks on the yards lash under the fore-part of the yard, as the lower ones, and reeve with a double tye in large ships, and a single tye, like the lower, in small ones. The standing-parts of the double ties clinch round the mast-head, then reeve through the double-block upon the yard, and up again, and reeve through the block on each side the mast-head. The fly-blocks are then spliced in their lower ends, and connected by their haliards to a single block, that is strapt with a long strap, Pl. III. fig. 49, with a hook and thimble, that hooks to a swivel eye-bolt in the channel on each side: the leading-part comes in through a block lashed on each side; the foremost ones abaft the forecastle, and the after ones on the quarter-deck.

CLUE-LINE BLOCKS are strapped with two lashing-eyes, and lash upon the yards three feet without the slings; the blocks hanging underneath the yard, through which the clue-line reeves, and is strapt with a knot, and leads down upon the deck. Pl. II. fig. 21.

TOPGALLANT-SHEET BLOCKS are strapped with two lashing-eyes, and lash upon the yard, close within the clue-line blocks on each side.

BUNT-LINE BLOCKS are spliced round the strap of the topfail tye-block upon the yard.

The **YARD** is next heaved up, and

The **PARRAL** is fastened round the aft-side of the mast, and round the yard, to fasten the yard to the mast. The upper and lower rope in the parral have an eye spliced in the end, one eye passing under the yard, the other over, till both eyes meet on the fore-side, and are seized together with spunyarn. The other two ends of the parral-rope are passed round the yard and the hind-part of the parral, alternately, till the latter is sufficiently secured to the former; and the whole of the turns are marled together with quarter-seizings, to confine them close in the cavity formed on the back of the ribs.

THE RIGGING OF THE TOPGALLANT-MASTS.

The **TOP-ROPE** reeves for the topgallant-mast as it does for the topmasts, observing to stop it to the topgallant-mast head with spunyarn, to keep it steady, till it has entered the topmast-cap. The stop is then cut, and the end of the top-rope made fast to the eye-bolt in the topmast-cap. Sometimes it is rigged abaft the mast.

The **GROMMET**, made of a rope spliced to the size of the mast, is first put over the head, and then beat down to the stop of the hounds.

SHROUDS, prepared on shore, are hoisted, and placed over the topgallant-mast head, the same as the topmast.

BACKSTAYS, prepared on shore, are next hoisted, and placed over the topgallant-mast head, the same as the topmasts.

The **STAY**, prepared on shore, is hoisted and placed over all.

FLAG-STAFF STAY goes round the topgallant or royal-mast head, with a running-eye; is kept close under the trunk, by a small cleat nailed on each side.

The **TOPGALLANT-MAST** is then swayed up and fidded.

SHROUDS are thrust through the hole in the end of the topmast cross-trees, and between the topmast-shrouds, over the futtock-flave. A thimble is seized in the ends that sets up with a laniard through a thimble seized in the bight of a strap made fast round the futtock-plates, close under the dead-eyes, with a turn through the bight.

BACKSTAYS set up the same as the topmast-backstays, to a small dead-eye in the aft-part of the channel, or in a stool abaft the channel.

The **FORE-TOPGALLANT STAY** comes to the outer end of the jib-boom, and reeves through a thimble; then a thimble is turned in the end, and seized to a block, and set up with a jigger-tackle occasionally, and secured, by a laniard, to the gammoning, or to an eye-bolt in the head.

The **MAIN-TOPGALLANT STAY** reeves through a block fastened to the fore-topmast head, has a thimble turned in the end of the stay, and sets up to a thimble in a span, made fast to the

treffle-

treble-trees of the fore-mast, with a laniard cat's-pawed to the top-burton tackle, or a handspec in small ships, termed a Spanish windlafs.

The STAYSAIL-STAY is spliced into the topgallant-stay, six feet below the stop of the mast; it then reeves through a block or thimble secured to the fore-topmast head, takes a turn round the treble-trees, and belays there.

The MIZEN-TOPGALLANT STAY trices up to the main-topmast head, as the main-topgallant stay trices up to the fore-topmast head.

SHIFTING-BACKSTAY, the same as those of the topmasts.

The FLAGSTAFF-STAY sets up by hand. The fore-mast one passes through a thimble at the jib-boom end, and belays round the fore-stay collar; the main one passes through a thimble above the fore-topgallant rigging, and belays in the top. — Mizzen one the same to main-topgallant rigging.

ROYAL-MASTS, in East-India ships, are rigged as topgallant-masts, and generally abaft the mast.

THE RIGGING OF THE TOPGALLANT-YARDS.

The YARDS are hove on board by the top-rope, as the topfail-yards, and rig with horses, braces, and lifts, of large ships, over the yard-arm, the same as the topfail-yards.

TOPGALLANT-LIFTS, of small ships, are single, and go over the yard-arm with an eye spliced in one end; the other end reeves through a thimble in the topgallant-shrouds, leads down into the top, and belays round the dead-eyes.

The TYE reeves through the sheave-hole in the hounds of the topgallant-mast, and clinches round the yard in the slings or middle; then has a double-block turned in the lower end, and is connected, by the haliards, to a single-block lashed to the after-part of the lower treble-trees, under the top: the lower end of the haliards belays round the cross-piece of the bitts abaft the mast.

FORE-TOPGALLANT BRACES reeve through the block in the pendent. The standing-part makes fast with a hitch, and the end seized back round the collar of the main-topmast stay on each side; and the leading-part reeves through a block lashed round the

collar, a little below the standing-part; then leads through a block at the aft-part of the fore-top, and belays to a cleat on each side the bellfry.

MAIN-TOPGALLANT BRACES reeve through the block in the pendent, and the standing and leading parts make fast, and reeve to the collar of the mizen-topmast stay, as the former does to the main-topmast stay, and lead down into the mizen-shrouds.

MIZEN-TOPGALLANT BRACES are single, and go with a splice over the yard-arm. They lead aft through a thimble at the mizen-peek, and come down on the fore side of the taffarel.

CLUE-LINE BLOCKS are strapt with two lashing-eyes, and lash upon the yard three feet without the slings. Pl. II. fig. 22. The blocks hang under the yard, through which is reeved the clue-line, with is stopt with a knot. The leading-part leads down the mast, and into the lower-shrouds.

The **YARD** is next swayed up, and

The **PARRAL** fixed as the topfail-yard.

THE RIGGING OF THE ROYAL-YARDS.

If there are royal-masts, they rig as topgallant-yards: but, if there are no royal-masts, they set flying; in which case, the **HALIARD** reeves through a sheave-hole close up under the truck; the standing-part clinches to the middle of the yard, and the leading-part comes down upon deck.

BRACES go over the yard-arm with an eye; they lead through single-blocks at the next topgallant-mast head aft, or mizen-peek, and lead down upon deck.

THE RIGGING OF THE MIZEN-YARD.

A **MIZEN-YARD** is not often used, except in ships above 50 guns, and in East-India ships. It is hove on board, as before observed, and rigs with a jeer-block lashed between the cleats, as before, and likewise a double-block round the mast-head, and both are connected by the jeer-fall. Pl. II. fig. 23. The standing-part is clinched round the mast-head, and the leading-part comes to the mizen-chains; and, after the yard is swayed up, is made fast to an eye-

eye-bolt hitched and seized. The remainder of the fall is coiled up, and stops to the laniards of the shrouds on the starboard-side.

The DERRICK-BLOCK is strapt with eyes, that go round the yard, and lash underneath, between the flings and the outer yard-arm or peek; the other block is cross-seized into the strap, has an eye spliced in each end, and lies upon the mizen-cap, and seizes or hangs through the eyes under the cap, or upon the upper side of it.

The DERRICK-FALL reeves through the double-block at the mast-head, then through the single-block upon the yard. The standing-part is again taken up and reeved through the block at the mizen-cap; an eye is then spliced in the end, the size of the yard-arm, that goes over the peek-end. The leading-part leads from the double-block at the cap through the trestle-trees, and makes fast in the mizen-channel on the larboard-side, as the jeers did on the starboard-side.

BRAIL-BLOCKS are strapt together in one strap, and lie over the yard, and seize together underneath; the throat-blocks next the cleats to the mast; the middle-blocks in the middle between the throat-block and peek; the peek-blocks about three or four feet within the cleats at the peek. Pl. II. fig. 23.

VANGS. The bight is put over the peek-end with an over-hand-knot, and the double-blocks spliced in the lower ends are connected by their falls to a single-block, that hooks to an eye-bolt in the upper-part of the quarter-piece on each side. The standing-part makes fast to the becket in the arse of the single-block, and the leading-part leads from the double-block, and belays to a cleat nailed on the taffarel fife-rail, or round the arse of the single-block.

BOWLINES reeve through a single-block strapt with a thimble into an eye-bolt in the lower end of the yard, and through a block hooked to an eye-bolt on each side abreast the lower end of the yard, or lashed to the mizen-shrouds.

The HORSE for the mizen-sheets clinches to an eye-bolt on each side the taffarel with a thimble, to which is strapt the sheet-block.

The **SIGNAL HALIARD-BLOCK** is lashed to the eye-bolt in the peek of the yard. Pl. II. fig. 23.

The **YARD** is then hoisted, and the **SLINGS** go round the mast-head, and round the yard at the slings abaft the mast,

THE RIGGING OF THE GAFF.

The **GAFF**, when used, is rigged similarly to a mizen-mast, excepting only that it has a throat-haliard instead of jeers, and a span instead of a derrick.

THE RIGGING OF THE DRIVER, OR SPANKER-ROOM.

The **TOPPING-LIFT** goes over the end of the boom with a clove-hitch, and comes against the shoulder; the ends are reeved through a single-block lashed on each side the mizen-mast head, and a double-block spliced in each lower end, which connects by the fall to a single-block, hooked in an eye-bolt in the mizen-channel on each side. The standing-part makes fast to the becket in the arse of the single-block, and the leading-part leads from the double-block, and belays to a cleat on each side the mizen-mast.

GUY-PENDENTS have a hook and thimble spliced in one end, that hooks to the thimbles seized in the strap. They are spliced round the boom perpendicular to the lower block fixed round the horse within the taffarel; and there stopt by cleats nailed on the fore-side. A thimble is spliced in the inner ends of the pendants, with a luff-tackle hooked to them on each side, and are used where most wanted.

SETTING-UP THE SHROUDS.

SHROUDS are set up for sea after the stays, as before; as are also the topmast-shrouds and backstays.

RIGGING

RIGGING AND BENDING THE SAILS.

RIGGING AND BENDING THE FORE-SAIL.

The sail is laid athwart the main-stay, ready for bending, and the sheet-block is put over the clue on each side. The tack-knot is then thrust through the clue on the back-side, and the strap of the clue-garnet block put through the clues; the eyes are brought up on each side, and seized at the top.

SHEETS are reeved through the sheet-block on each side, and the standing-part seized to a thimble, in an eye-bolt, a little before the gangway. The leading-part reeves through a sheave-hole in the side, a little before the gangway-ladder; then leads forward, and belays round a large cleat in the side.

TACKS, single, lead through the block lashed round the outer end of the boomkin on each side, then lead upon the forecastle, and belay round a large cleat upon the cat-head, or to the topfail-sheet bitts.

TACKS, double. The standing-part makes fast round the outer end of the boomkin, and the leading-part reeves through a single-block lashed to the clue of the sail, then through the block at the outer end of the boomkin, and leads in upon the forecastle.

CLUE-GARNETS reeve through the upper block upon the yard on each side, then through the block at the clue of the sail.

The

The standing-part is carried up, and made fast round the yard by its block with a timber-hitch, and the end stopt. The leading-part comes upon deck, and reeves through the sheave-hole in the top-fail-sheet bitts, and there belays.

LEECH-LINES reeve through the spritfail-brace block, under the top, then through the block upon the yard, and the standing-part makes fast with a clinch to the upper bowline-bridle; the leading-part then reeves through a double-block, at the aft-part of the top, and upon the forecastle.

BUNT-LINES reeve through the leg and fall-block, and through a double-block at the aft-part of the top; then through a double-block under the fore-part of the top, and through the blocks upon the yard, and lead down the fore-side of the sail, and clinch to the cringles in the foot. The fall reeves through the leg-block; the standing-part makes fast round the breast-rail, and the leading-part through a sheave-hole in the breast-work, and belays round the rail.

BOWLINES reeve through a single-block lashed round the collar of the fore-stay, or the fore preventer-stay, on the bowsprit, and the outer-part reeves on the bowline-bridle, with a thimble spliced in the end, and the bridle clinches to the cringle on the leech of the sail. The leading-part leads upon the forecastle, and belays to the fore-topfail-sheet bitts.

SLAB-LINES reeve through a small block lashed to the strap of the quarter-block, and the standing-part clinches with two legs to the middle bunt-line cringles. The leading-part leads to the top-fail-sheet bitts, and belays round the middle of the cross-pieces.

YARD-ROPES are temporary, and only used to get up the sail; they reeve through tail-blocks that are made fast round the boom-iron at each yard-arm, and one end comes down and makes fast to the upper reef-ear-ring. The leading-part leads upon deck, through a leading-block that lashes to a timber-head or bolt in the gunwale. The sail is then run up to the yard, where the men go and pass the

EAR-RINGS, one end of which is spliced to the head-crinkle, with a long eye; the other end passes over the yard-arm without the rigging, through the cringle, alternately, two or three times,

and

and is passed round the yard within the rigging, and through the cringle, till the ear-ring is expended, and the end made fast with two half-hitches. The outer turns are to stretch the upper edge of the sail tight along the yard, and the inner turns to draw it close.

REEF-EAR-RINGS the same.

ROPE-BANDS are braided cordage, with an eye made in one end, and one leg longer than the other. The eye of the long leg is put over the short leg, and the eye of the short leg is thrust through the eye-let hole at the aft-part of the sail; then the end of the long leg goes over the head of the sail, and passes the eye of the short leg; and so of the rest. The rope-bands being previously reeved through the head of the sail, they are fastened to the yards by their heads, as follow: The long legs come over the yard from the fore-side, with a round turn between the head of the sail; the short leg comes up the aft-side, and makes fast with a reef-knot upon the yard. The sail is then let fall to see it is clearly bent. For the number of rope-bands, points, and gaskets, for each sail, see the Table among the sail-tables.

POINTS are usually put in the sail, at the sail-loft, thus: An overhand-knot is made in the middle of the point, then thrust through the sail, and knotted close to the sail on the opposite side.

GASKETS go round the yard with a running-eye, two on each quarter, and one on each yard-arm, with a bunt-gasket in the middle that has two legs, and lashes to the yard on each side of the quarter-blocks.

RIGGING AND BENDING THE MAIN-SAIL.

The sail is laid athwart ready for bending, and the

SHEET-BLOCK, TACK and **CLUE-GARNET-BLOCKS**, are placed in the clues, as for the fore-sail.

SHEETS reeve through the sheet-block at the clues. The standing-part is seized to an eye-bolt with a thimble on the quarters. The leading-part leads through a sheave-hole on the same side under the half-deck, and belays to a range-cleat in the waist.

TACKS, single, reeve through the sheave-hole in the chess-tree, one on each side, and through a sheave-hole in the side, and belay round a large range-cleat in the aft-part of the waist.

TACKS,

TACKS, double. The standing-part clinches to an eye-bolt before the chefs-tree, and the leading-part reeves through a single-block, lashed to the clue of the sail; then leads in upon deck through the sheave-hole in the chefs-tree side.

CLUE-GARNETS, as for the fore-sail.

LEECH-LINES reeve through the block upon the yard, and the outer end makes fast with a clinch to the upper bowline-bridle. The leading-part reeves through the double-block at the fore-part of the top, and through a double-block at the aft-part of the top: a single-block is turned into the lower end; and a whip-fall reeved through it. The standing-part makes fast to the breast-rail, and the leading-part through a block under the breast-rail, and belays round the rail.

BUNT-LINES reeve as for the fore-sail, and lead forward upon the forecastle.

BOWLINES reeve through a double-block, that, with a strap, lashes round the fore-mast five feet above the forecastle, and the outer-part reeves upon the long leg with a thimble. The lower bridle is the longest, and clinches to the lower cringle upon the sail. In the other end is spliced a thimble, through which reeves the upper leg, that clinches to the upper cringle. The starboard-bowline belays on the larboard, and the larboard-bowline leads over and belays on the starboard-side. Four feet from the bridle is a thimble, spliced and pointed on each bowline, called a lizard, to which is hooked a bowline-tackle that makes fast to the bitts, and is bowfed upon until the bowline is made fast to the bitts.

SLAB-LINES, as the fore-sail.

YARD-ROPES, and bending as the fore-sail.

EAR-RINGS,

ROPE-BANDS,

POINTS,

GASKETS,

} as the fore-sail.

RIGGING AND BENDING THE MIZEN-COURSE.

The **EAR-RING** reeves, with an eye in one end, round the cringle in the peek of the sail, and makes fast round the peek, as
other

other ear-rings; and the ear-ring at the nock of the sail the same as the peek.

LACING is spliced to the peek ear-ring cringle, and laces round the yard or gaff through the eyelet-holes in the head of the sail, and makes fast to the neck ear-ring cringle. Lacing round the mast is spliced to the nock-crinkle, and laces round the mast backwards and forwards on the fore-side, and through each cringle on the fore-leech of the sail, making fast to the tack at the lower end.

The **TACK** sets up with a lanyard reeved through the tack-crinkle in the sail, and through an eye-bolt in the deck.

The **SHEET** reeves through a block on a horse at the fore-part of the taffarel, and through another block, that hooks to the thimble in the clue of the sail, then again through the block on the horse, and the leading-part belays round a cleat on the side.

BRAILS. Throat, middle, and peek, brails reeve through blocks on the yard or gaff, and make fast to cringles on the after-leech of the sail on each side. The throat-brails lead down by the mast; the middle-brails lead down to the after-mizen shroud on each side; and the peek-brails to the fife-rail on each quarter.

The **FANCY-LINE** has two spans, with a thimble seized in the bight, and a thimble spliced in each end; one thimble reeves upon the throat-brail, the other on the middle-brail, on each side the sail. The fancy-line reeves through blocks lashed at the peek end, and each end bends to the thimble in the bight of the span on each side. When the mizen is set, the brails are hauled up by the fancy-line, that they may have slack, and not girt the lee-side of the sail.

RIGGING AND BENDING THE JIB.

The **DOWNHAULER** reeves through a small block that lashes to the traveller on the jib-boom, then leads up through the hanks, and bends to the head of the jib. The leading-part leads in upon the forecastle.

The **HALIARDS** reeve through the lower sheave of the cheek-block at the fore-topmast head, from aft on the starboard-side, and bend to the head of the sail. The leading-part leads abaft the top to the after-part of the forecastle.

Large ships have a single block turned into the haliards, and a whip-fall; the standing-part making fast into the side.

SHEETS. The bight is bent to the clue of the sail, and a single-block turned in each inner end, that reeves a whip-fall. The standing-part makes fast to a timber-head, and the leading-part leads in upon the forecastle, and belays to a timber-head before the shrouds on each side.

STAY reeves through the sheave in the cheek-block at the fore-topmast head from aft on the starboard-side, then through the hanks, and clinches to the traveller upon the boom: A double-block is then turned in the lower end, and connects by its fall to a single-block, lashed to the after-part of the fore-mast trestle-trees, leads upon deck, and belays to the main-top bowline-bitts.

OUTHAULER reeves through a sheave-hole at the outer end of the jib-boom, and clinches to the span-shackle of the traveller. The other end has a double-block turned in, which connects, with its fall, a single-block hooked to an eye-bolt in the fore-part of the bowsprit-cap, and the fall leads in on the forecastle.

INHAULER reeves through a small block lashed on the traveller: the standing-part makes fast to an eye-bolt in the side of the bowsprit-cap, and the leading-part comes in upon the forecastle.

RIGGING AND BENDING THE FORE-TOPMAST STAYSAIL.

The **STAY** reeves through the hanks, then makes fast with a running-eye round the bowsprit, between the collars and spritsail-yard, then reeves through the upper sheave of the cheek-block, at the fore-topmast head, on the larboard-side; has a double-block turned into the lower end, and connects, by its fall, to a single block lashed to the after-part of the fore-mast trestle-trees, leads upon deck, and belays to the main-top bowline-bitts.

The **DOWNHAULER** reeves through a small block that lashes at the tack of the sail, then leads through the hanks, and bends to the head of the sail, and the leading-part comes upon the forecastle.

HALIARDS reeve through the lower sheave of the cheek-block of the fore-topmast head on the larboard-side, and bend to the head of the sail. The leading-part reeves abaft the top to the after-part of the forecastle, and belays to a cleat in the side.

SHEETS.

SHEETS. The bight is bent to the clue of the sail, and leads through a single-block on each side upon the forecattle.

OUTHAULER reeves through a block lashed at the outer end of the bowsprit: the standing-part makes fast to the tack of the sail, and the leading-part comes in upon the forecattle.

RIGGING AND BENDING THE FORE-TOPSAIL.

The **FORE-TOPSAIL** is swayed up into the top by the topfail-haliards, that make fast to slings round the middle of the sail, and are then laid in the fore-part of the top fair for bending.

SHEETS are first passed through the fore-part of the clue of the sail, and stopt with an overhand-knot. They reeve through the shouldered-block at the lower yard-arm, then through the quarter-block, and come down before the mast: reeve through the sheave-holes in the bitts, and are there belayed.

CLUE-LINES. The straps of the blocks are passed through the clues of the sail, and brought round the clue to the fore-part, and securely seized. The clue-lines are passed the same at the clue-garnets of the lower-sails, and sometimes have no blocks, but bend to the clue of the sail.

BUNT-LINES reeve through the block upon the yard, come down on the fore-side of the sail, and clinch to the cringles in the foot. The leading-part reeves through a single-block, lashed close under the topmast cross-trees, leads down through the square of the top, and belays to the shrouds.

BOWLINES reeve through the blocks at the bowsprit-cap. The outer-part reeves on the lower bowline-bridle with a thimble, as the main-sail. The leading-part comes upon the forecattle, and belays to the topfail-sheet bitts.

REEF-TACKLE PENDENTS reeve through the upper sheave in the fister-block in the topmast-shrouds, then through the sheave-hole in the yard-arm, and clinch to the reef-tackle cringle in the sail.

REEF EAR-RINGS reeve through their bights in each reef-crinkle, and stop to the next cringles and head of the sail, till used.

EAR-RINGS,
ROPE-BANDS, } as for the fore-sail.
POINTS,

GASKETS. The yard-arm gasket reeves with an eye round the yard-arm within the cleats. Quarter-gaskets reeve between the arm and the middle. Bunt-gaskets have two legs, and lash to the yard, with an eye on each side of the tye-block, and fasten thereto, when the sail is hauled up in the bunt.

RIGGING AND BENDING THE MAIN-TOPSAIL.

The **MAIN-TOPSAIL** is swayed up into the top, as the fore-topfail.

SHEETS,
CLUE-LINES, } as the fore-topfail.
BUNT-LINES,

BOWLINES reeve through blocks lashed round the fore-mast head close under the cap: the outer-part reeves on the lower bowline-bridle, with a thimble, as the fore-topfail. The leading-part comes down through the square of the top, reeves through a sheave-hole in the main-top bowline-bitts upon the forecastle, and there belays.

REEF-TACKLE PENDENTS,
EAR-RINGS,
ROPE-BANDS, } as the fore-topfail.
POINTS,
GASKETS,

RIGGING AND BENDING THE MIZEN-TOPSAIL.

The **MIZEN-TOPSAIL** is swayed up as other topfails, in large ships.

SHEETS,
CLUE-LINES, } as the fore-topfail.
BUNT-LINES,

BOWLINES bend to the sail as the fore-topfail, and reeve through a single-block seized to the main-shrouds on the opposite side near the futtock-staff; they lead down through a seizing-truck upon the quarter-deck, and belay round a pin in the fife-rail.

REEF-

REEF-TACKLE PENDENTS,

EAR-RINGS,

ROPE-BANDS,

POINTS,

GASKETS,

as the fore-topfail.

RIGGING AND BENDING THE FORE-TOPGALLANT SAIL.

The sail is either swayed up to the topmast cross-trees by the clue-lines, or bent to the yard below. It is hauled out to the yard-arm by the ear-rings, and bends or laces to the yard, as before observed.

SHEETS and CLUE-LINES are bent to the clues of the sail, and lead upon deck, as the fore-topfail.

BUNT-LINES reeve through a small block seized to the topgallant-mast head, then through a thimble seized to the tye, close down upon the yard, and bend, with legs, to the cringles in the foot of the sail. The leading-part comes down into the top.

BOWLINES reeve through the thimbles at the jib-boom end, and fasten to the sail as the topfail, only with a toggle to cast off the bowline for sending the yard down. The leading-part comes upon the forecastle, and belays to a pin in the breast-hook.

The JACK-BLOCK is used for sending topgallant-yards up or down: it is strapped with a seizing-eye, through which reeves a rope, with an eye spliced in one end, and a double walnut-knot made at the other end, called a button-and-loop. It goes round the mast, is secured by the knot being thrust through the eye, and is triced up or down the mast by the topgallant-tye, which bends through the eye of the strap. When the yards are swayed up, the top-rope reeves through the jack-block, and makes fast with a hitch, first taken round the yard in the slings, then stopt at the outer-quarter and eye-bolt in the yard-arm. When lowered, the same, except the stop at the eye-bolt. The rigging is taken off or put on by men at the mast-head, when the yards are swayed up or lowered down.

RIGGING AND BENDING THE MAIN-TOPGALLANT SAIL.

As the former; the bowlines reeving through the sheave-holes in the after-part of the fore-topmast cross-trees, and leading down upon deck.

RIGGING AND BENDING THE MIZEN-TOPGALLANT SAIL

As the former; the bowlines reeving through the sheave-holes in the aft-part of the main-topmast cross-trees.

RIGGING AND BENDING THE ROYALS.

ROYALS are set flying; the clues lashed to the topgallant yard-arm.

East-India ships sometimes have royal-masts, and then the royals rig similar to topgallant-sails.

RIGGING AND BENDING THE MAIN-STAYSAIL.

This sail is seldom bent in ships but at sea, though commonly in brigs. It bends to the main-stayfail stay with hanks and seizings.

STAY. The upper end clinches round the main-mast head above the rigging, and the lower end sets up with a luff-tackle round the fore-mast.

HALIARDS reeve through a single-block bent to the head of the sail. The standing-part makes fast round the main-mast head, and the leading-part reeves through a block lashed upon the rigging under the top, and leads down abaft the mast: a double-block is turned into the end, connected by its fall to a single-block, hooked to an eye-bolt in the sides abaft the main-mast.

The DOWNHAULER reeves up through the hanks, bends to the head of the sail, and belays to the main-top bowline-bitts.

TACK bends to the tack of the sail, and lashes the tack of the sail to the fore-mast or bitts.

SHEETS are doubled, and the bight put through the clue of the sail; the ends are reeved through, have a single-block spliced into each end, and falls reeved. Their standing-parts are made fast round a timber-head on each side the fore-part of the quarter-deck, and the leading-parts through a snatch-block on each side, and belay to the next timber-head. Sometimes a luff-tackle is clapt on to bowse the sheets aft.

RIGGING AND BENDING THE MIZEN-STAYSAIL.

This sail bends to the mizen-stayfail stay with hanks and seizings.

The

The **STAY** clinches round the head of the mizen-mast, then reeves through a thimble seized in a collar lashed round the main-mast, and sets up with a laniard through a thimble turned into the stay, and an eye-bolt in the deck abaft the mast. In small ships, the mizen-stay-sail bends to the mizen-stay.

HALIARDS reeve through a block at the head of the sail. The standing-part makes fast round the mizen-mast head, and the leading-part reeves through a block lashed to the trestle-trees, then through a leading-block in the side, and belays round a timber-head.

The **DOWNHAULER** reeves up through a block made fast to the collar of the stay, then through the hanks, and bends to the head of the sail. The leading-part belays round the fore-brace-bits abaft the main-mast.

BRAILS reeve through blocks lashed on each side the collar, then through thimbles in a strap put through the sail, and make fast to a cringle on the after-leech of the sail. The leading-part belays round the breast-rail on the quarter-deck.

The **TACK** splices to the cringle in the tack of the sail, and lashes it to an eye-bolt in the deck abaft the main-mast.

SHEETS bend to the clew of the sail, with a long and short leg, having a thimble spliced in the latter. The long leg reeves through a block or bolt in the side, and through the thimble in the short leg, and belays round a timber-head in the side.

RIGGING AND BENDING THE MAIN-TOPMAST STAYSAIL.

This sail bends to the topmast preventer-stay with hanks and seizings.

HALIARDS reeve from the aft-side through the cheek-block at the main-topmast head on the larboard-side, and come down and bend to the head of the sail. The leading-part leads through a block in the side, and belays to a pin in the side-rail.

The **DOWNHAULER** reeves through a block seized to the strap of the main-bowline block; it is then carried up and reeved through another block seized to the topmast preventer-stay, at the catharpins, then upwards through the hanks, and bends to the head of the sail.

BRAILS

BRAILS reeve through blocks that are lashed to the strap of the main-bowline block; they are then carried up and reeve through other blocks, seized to the topmast preventer-stay, at the cathead-pins, on each side, and make fast on each side the sail to a cringle on the after-leech.

TACKS are doubled; the bight is put through the tack of the sail, the ends are reeved through the bight, and lead through a thimble seized on the lower-shrouds on each side; they then lead down, and belay round a cleat lashed to the shrouds near the deck.

SHEETS are doubled; the bight is put through the clue of the sail, and the ends through the bight. A block is spliced in each end, and falls reeved. Their standing-parts make fast on each side to a boatskid next the quarter-deck, and the leading-parts reeve through a block on the gunwale on each side abaft the gangway, and belay to a pin in the boatskid.

RIGGING AND BENDING THE MIDDLE-STAYSAIL.

This sail bends to the middle stay-sail-stay with hanks and seizings.

STAY. The standing-part reeves up through the hanks, and makes fast to a thimble seized in a strap or grommet, made fast round the fore-topmast, under the parral. The leading-part reeves through the upper sheave at the main-topmast head: a double-block is then turned into the end, and connects, by its fall, with a single-block that lashes to the main tressle-trees, and the fall leads upon deck abaft the mast, by which it is set up.

HALIARDS reeve through the lower-sheave of the check-block at the main-topmast head, and bend the head of the sail; the other end leads upon deck abaft the mast.

The **DOWNHAULER** reeves through a single-block seized to the stay at the nock of the sail, then leads up through the hanks, and bends to the head of the sail. The leading-part leads upon deck abaft the fore-mast.

TACKS are doubled; the bight is put through the tack of the sail, and the ends reeved through the bight, and each end through a thimble seized in the fore-topmast shrouds, leading down and belaying in the top.

SHEETS

SHEETS are doubled; the bight is put through the sheet of the sail, the ends are reeved through the bight, and each end through a block on the gunwale abaft the gangways, and belay round a boatskid.

TRICING-LINE clinches to the grommet round the fore-topmast, and reeves through a block under the fore-topmast cross-trees, and leads down into the top.

RIGGING AND BENDING THE MAIN-TOPGALLANT STAYSAIL.

This sail bends to the stay with hanks and seizings.

STAY. The upper end splices into the topgallant-stay below the rigging, and the lower end reeves through a thimble seized round the fore-topmast cross-trees, leading down and making fast in the top.

HALIARDS reeve through a sheave-hole a little above the hounds of the main topgallant-mast; one end bends to the head of the sail, and the leading-part comes down upon deck, and belays to the bitts on the quarter-deck abaft the mast.

The **DOWNHAULER** reeves up through the hanks, and bends to the head of the sail; and the leading-part comes down upon deck abaft the main-mast.

TACKS, } as the middle-stay-sail.
SHEETS, }

RIGGING AND BENDING THE MIZEN-TOPMAST STAYSAIL.

This sail bends to the mizen-topmast stay with hanks and seizings.

The **HALIARD** reeves through the sheave-hole in the topmast above the rigging, or through a block lashed round the mast-head; one end bends to the head of the sail, the other end leads down upon deck abaft the mast.

The **DOWNHAULER** reeves up through the hanks, and bends to the head of the sail, the other end leads down upon and belays round the breast-rail.

TACKS are doubled; the bight is put through the tack of the sail; the ends are reeved through the bight, and through a thimble

seized to the main-topmast shrouds on each side, leading down and belaying in the top.

SHEETS are doubled; the bight is put through the clue of the sail; the ends are reeved through the bight, and through a thimble seized in the mizen-shrouds on each side, leading down and belaying round a pin in the hand-rail on each side.

RIGGING AND BENDING THE MIZEN-TOPGALLANT STAYSAIL.

This sail bends to the mizen-topgallant stay with hanks and seizings.

The **HALIARD** reeves through the hole above the topgallant-mast hounds; one end bends to the head of the sail, the other leads down upon deck abaft the mast, and belays round a pin in the hand-rail.

The **DOWNHAULER** reeves up through the hanks, and bends to the head of the sail; the other end leads to the main-top, and belays round the top-rail.

TACKS are doubled; the bight is put over the tack of the sail, and the ends through the latter; they are then reeved through a thimble seized in the main-topmast shrouds on each side, and lead into the top.

SHEETS are doubled, and put through the clue of the sail at the tacks, and reeved through a thimble seized in the mizen-shrouds, on each side near the catharpins, then lead down upon deck, and belay round a pin in the shroud-rack.

RIGGING AND BENDING THE SPRITSAIL.

The **SPRITSAIL** bends to its yard as the fore-sail.

CLUE-LINES reeve through the blocks upon the yard, and bend or reeve through a block at the clue of the sail, and lead in upon the forecastle.

BUNT-LINES, double, reeve through a block round the yard, and clinch to the cringles at the foot of the sail, and lead in upon the forecastle.

BUNT-LINES, single, reeve through a block in the flings of the yard, and clinch with legs to the cringles in the foot of the sail, and lead in upon the forecastle.

SHEETS,

SHEETS, double, reeve through a block seized to the clue of the sail; the standing-part clinches to an eye-bolt in the bow, and the leading-part comes in-board.

SHEETS, single, bend to the clue of the sail and lead in-board.

RIGGING AND BENDING THE SPRITSAIL-TOPSAIL.

The **SPRITSAIL-TOPSAIL** bends to the yard with lacing and ear-rings.

CLUE-LINES the same as the spritsail.

SHEETS reeve through the sheet-block at the spritsail-yard arm, and hook to the clue of the sail, and lead in upon the forecastle through a block lashed on each side the bowsprit.

RIGGING AND BENDING THE DRIVER OR SPANKER SAIL.

This sail is bent as a temporary matter, and is made fast at the peek andnock with an ear-ring, as the mizen, and makes fast to the yard and gaff with four or five pair of haliards, that reeve through blocks made fast with tails round the yard or gaff, one end of the haliard being bent to the head of the sail. The throat-haliards reeve with a double and single block: the former is made fast round the mast-head, and the latter hooks to the nock-crinkle on the sail.

The **TACK** is set tight with a luff-tackle, that hooks to the crinkle in the tack of the sail and to an eye-bolt in the throat of the boom.

The **SHEET** reeves through a block or sheave-hole at the outer end of the boom, and bends to the clue of the sail; a luff-tackle is cat's-pawed to the other end of the sheet; the inner block hooks to the taffarel, and the fall leads in upon the quarter-deck. When this sail is bent to the mast, yard, or gaff, instead of the mizen, it bends exactly the same, only the foot of the sail is extended on the boom as above.

DOWNHAULER reeves through a block made fast to the middle of the driver-yard, and leads down to the taffarel.

RIGGING AND BENDING THE LOWER STUDDINGSAILS.

These sails are bent to a yard at the head, with rope-bands, the same as other sails.

OUTER-HALIARDS reeve through a span-block, first round the lower cap, and through a block at the lower yard-arm, Pl. II. fig. 20, and bend between the cleats of the studdingsail-yard; the other end leads down upon deck.

INNER-HALIARDS bend to the upper inner-crinkle on the head of the sail, then reeve through a tail-block made fast round the quarter of the lower-yard, and through another block made fast round the yard near the mast, and lead down upon deck.

TACKS bend to the outer clue on the foot of the sail, and reeve through a block lashed round the outer-part of the boom; they are carried aft, and lead through a block lashed to the main-chains, come through a port, and belay round a cleat in the waist. The other is carried forward, and reeves through a block lashed to the bees of the bowsprit. The main-studdingsail tack reeves through a block at the end of the boom, and through a block lashed to an eye-bolt in the buttock; and leads in through a snatch-block lashed on the quarter on each side.

SHEETS are doubled; the bight is put over, and the ends through the inner clue on the foot of the sail: one leads forward, the other aft.

The FORE-STUDDINGSAIL sets flying, or with a boom at the foot. If flying, the foot of the sail spreads on a yard that rigs with a span clinched round each yard-arm. A guy is bent to an eye that is crossed in the middle of the span, and leads aft through a block lashed to the main-chains, comes in through a port, and belays round a cleat in the waist. The sail, thus rigged, has no tacks.

BOOMS rig as follow: The hook in the inner end hooks to an eye-bolt in the aft-side of the cat-head, and the main-studdingsail boom to an eye in the iron strap on the fore-part of the main-channel: the end is confined down with a lashing to the chain-plates. The inner end of the fore-boom is confined down with a tackle made fast round the inner end of the boom, and the lower block

block is hooked to an eye-bolt in the wale. The guy clinches round the middle of the boom, reeves through a block lashed round the spritsail-yard, and comes in upon the forecastle.

RIGGING AND BENDING THE TOPMAST-STUDDINGSAILS.

These sails bend to a yard at the head with rope-bands, or are laced, as the other sails, and the foot is spread upon the boom that slides out from the extremities of the main and fore yard through the boom-irons.

HALIARDS reeve through a block in the span round the topmast-head, under the cap, and through the jewel-block, Pl. II. fig. 21, that is strapt with a thimble through an eye-bolt in the extremities of the topfail-yards, and bend to the topmast-studdingsail yard: the other end leads down upon deck, and belays to the bow-line-bitts.

The **DOWNHAULER** reeves through a block lashed to the outer clue of the sail, and through a thimble on the outer leech: it is then made fast to the topmast-studdingsail yard, just within the ear-ring, and leads into the waist.

TACKS bend to the outer lower clue of the sail; they reeve through a block lashed to the outer end of the boom, and lead aft through a block at the gangway, and belay to a timber-head. Tack of the main-topmast studdingsail leads in upon the after-part of the quarter-deck through a block lashed upon the quarter.

SHEETS are doubled; the bight is put through the lower inner clue, and the ends through the bight. The after-sheet of the fore-topmast studdingsail leads in abaft the fore-shrouds. The main hauls in upon the waist. The fore-sheet of the fore-topmast studdingsail leads in upon the forecastle; the after one before the shrouds. On the middle of the boom is fastened a selvagee, or a strap with a thimble, to which is hooked the top-burton tackle, to support the boom in the middle.

The **BOOMS** are run out by the tackles. The strap of the double-block makes fast through a hole in the heel of the boom, and the outer-block to the boom-iron, and the fall leads along the yard.

RIGGING AND BENDING THE TOPGALLANT-STUDDINGSAIL.

This sail bends to a yard at the head, as before, and the foot is spread on a boom that slides out at the extremities of the topfail-yards.

The **HALIARD** reeves through a block seized round the head of the topgallant-mast, above the hounds, or rigging, then through the jewel-block, Pl. II. fig. 22, strapt with a thimble through an eye-bolt at the extremities of the topgallant-yards, and bends to the topgallant-studdingsail yard; the other end leads down the mast into the top, and belays there.

The **DOWNHAULER** makes fast to the outer yard-arm within the ear-ring, and leads down into the top.

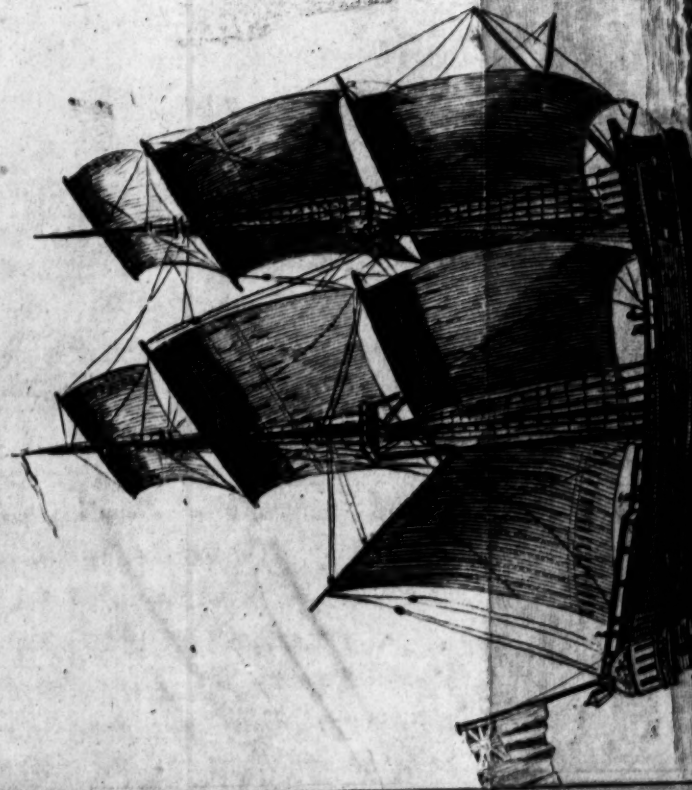
TACKS bend to the outer lower clue of the sail, and reeve through a thimble in a strap round the outer end of the topmast-studdingsail boom; and, in merchant-ships that have no boom, through a thimble in a strap round the outer yard-arm of the topmast-studdingsail, and leads aft the tack of the fore-topgallant studdingsail to the main-chains. The main leads to the quarter-piece.

SHEETS are doubled; the bight is put through the lower inner clue of the sail, and the ends passed through the bight; one end leads forward, and makes fast to the quarter of the topfail-yard, and the other end leads into the top, and belays to the topmast-shrouds.

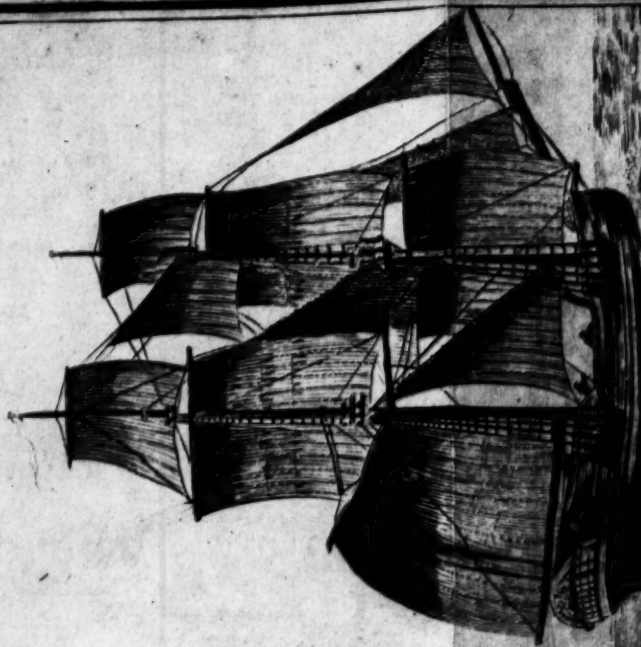
RIGGING

PLATE I.

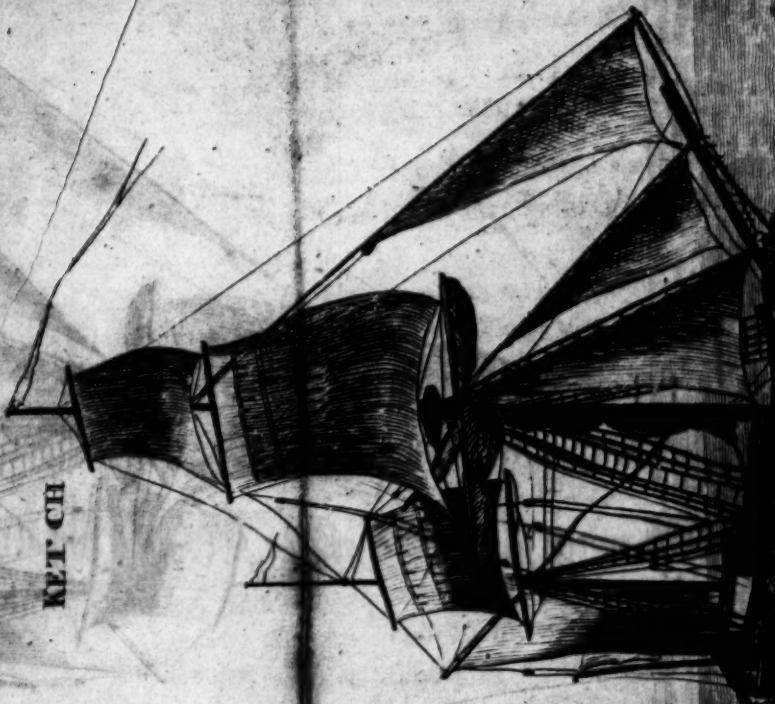
SNOW



BRIG



KETCH



BILANDER



RIGGING VESSELS WITH TWO MASTS.

A SNOW is the largest two-masted vessel, and is extremely convenient for navigation.

The fails and rigging on the main and fore mast are similar to those on the same masts in a ship, the braces of the fails on the main-mast leading forward: besides which, there is a small mast, close behind the main-mast, that carries a tryfail, resembling the mizen of a ship. This mast, called the tryfail-mast, is fixed in a step of wood upon deck, and the head fixed by an iron clamp to the aft-side of the main-top.

Vessels in the navy, that resemble snows, have a rope-horse, that sets up abaft the main-mast with dead-eyes and a laniard, to which the tryfail is bent, by hanks and seizings, similar to the tryfail of a snow.

An HERMAPHRODITE is a vessel so constructed as to be, occasionally, a snow, and sometimes a brig. It has therefore two main-fails; a boom main-fail when a brig, and a square main-fail when a snow; and a main-topfail larger than the fore-topfail.

Sometimes the boom main-fail is bent to the main-mast, as a brig; or on a tryfail-mast, as a snow.

RIGGING A BRIG.

The rigging of a brig is little different from the fore and main masts of a ship, the braces of the sails on the main-mast leading forward. The after-main shroud must be served from the mast-head to the dead-eye, to prevent its being chafed by the main-boom and gaff. The after-backstay is fitted with a tackle, that it may be slackened when the main-sail jibes, or is bowed forward by the boom-pendent and tackle. They carry no main-yard, but a cross-jack yard.

RIGGING A BILANDER.

A BILANDER is a merchant-ship with two masts, but different from others in the shape of the main-sail, which resembles a fettee-sail. The head is bent to a yard, similar to the mizen-yard of a ship, and hangs to the main-mast, as a ship's does to the mizen-mast.

This method has proved inconvenient, and is now seldom used but by the Dutch.

RIGGING A KETCH.

A KETCH is a vessel with two masts; the main-mast has a top-mast, and carries a main-sail, top-sail, and topgallant-sail, similar to a ship's; and sometimes, abaft the main-mast, is a large gaff-sail, called a wing-sail. The mizen-mast sometimes has a topmast, and carries a top-sail; and, abaft the mast, a gaff-sail, like a ship's mizen. The bowsprit is long, and on it are set two or three jibs.

RIGGING A SCHOONER.

A SCHOONER is a small vessel with two masts and a bowsprit. The masts rake aft, but the bowsprit lies nearly horizontal. On the bowsprit are set two or three jibs; on the fore-mast a square fore-sail; and, abaft the fore-mast, a gaff or boom sail; and above those a top-sail. Abaft the main-mast is set a boom-sail, and above it a top-sail. The main-stay leads through a block, at the head of the fore-mast, and sets up upon deck by a tackle. By these means, the

the sail abaft the fore-mast is not obstructed when the vessel goes about, as the peak passes under the stay.

Schooners sail very near the wind, and require few hands to work them. Their rigging is light, similar to a ketch's, and the topmasts fix in iron rings, abaft the lower mast-heads.

RIGGING A LUGGER.

A LUGGER is a small vessel with two masts, and a bowsprit nearly horizontal.

On the bowsprit are set two or three jibs; and the lug-sails hang obliquely to the masts, their yards being slung at one-third their length, one on each lower-mast and topmast: the topmast fixes abaft the mast-heads, as those of schooners.

Luggers sail well close-hauled, and very near the wind. The rigging is very light and simple. The masts are supported by shrouds and stays; the yards have haliards, lifts, and braces. To the lee-clue of the sail is a sheet, and to the windward-clue a tack, which is occasionally shifted as the vessel goes about. When this is often repeated, they lose ground in stays.

Some luggers have a small mast and a ring-sail set to it over the stern, and the foot spread by a small boom.

In blowing weather they have small lug-sails, the tack of which hauls down by the mast, as their large sails would endanger them, should they chance to get up in the wind.

RIGGING

RIGGING CUTTERS, OR VESSELS WITH ONE MAST.

RIGGING THE MAST.

GIRTLINE-BLOCKS are lashed at the mast-head, like those of ships.

PENDENTS OF TACKLES are wormed, parcelled, and served, their whole length; then doubled, and the bight seized to the size of the mast-head: the ends are then spliced together, and a single-block seized in the lower bight; the splice to lay on the arse of the block.

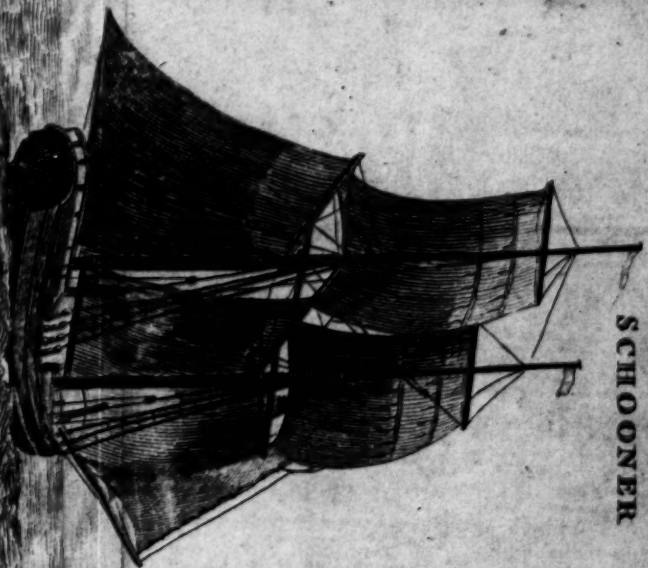
The ends of all splices are tapered, marled down, and served over with spunyarn.

RUNNERS OF TACKLES are fitted with a hook and thimble, spliced at one end and served over; and reeve through the block in the pendent, and through the strap of the long-tackle block, and splices.

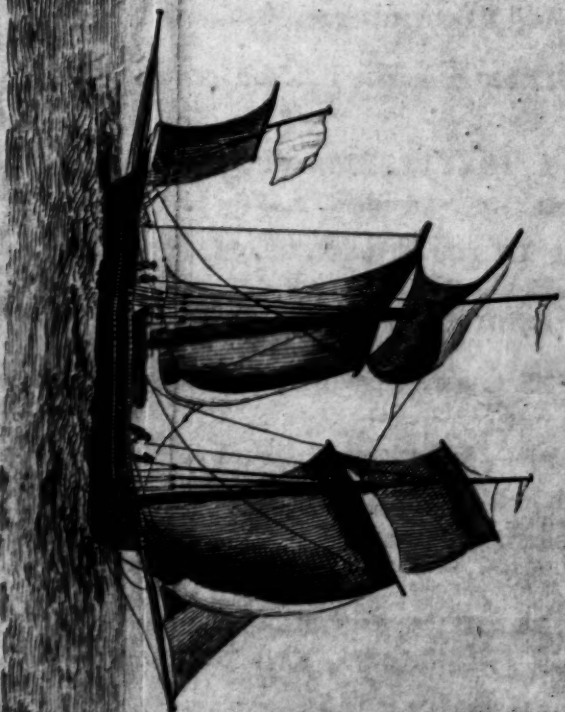
FALLS OF TACKLES reeve through the upper sheave of the long-tackle block, and through a single-block with a long strap, that has a hook and thimble spliced in it, and hooks to an eye-bolt in the side. The fall is then taken upwards, reeved through the lower sheave of the long-tackle block, and down again through the
bucket

PLATE 2.

SCHOONER



LEgger



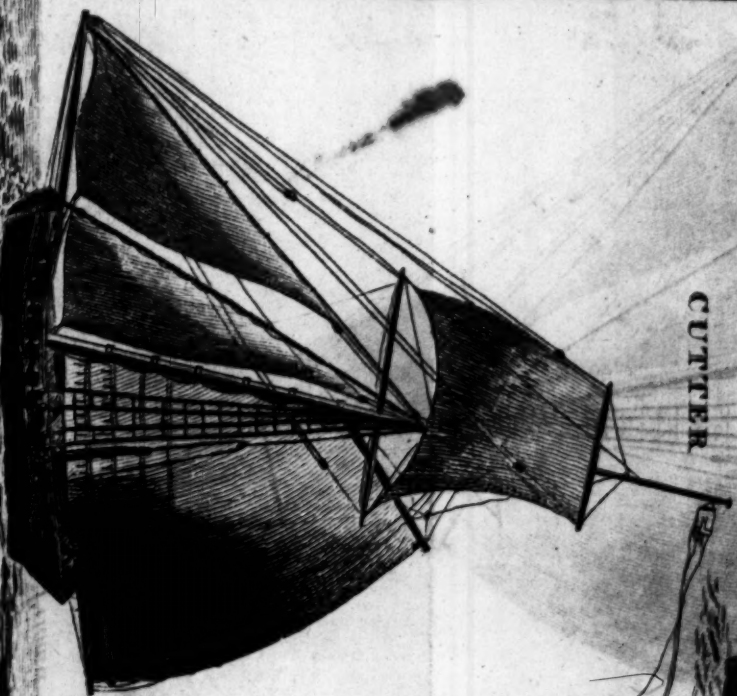
A Man of War's Pinnace



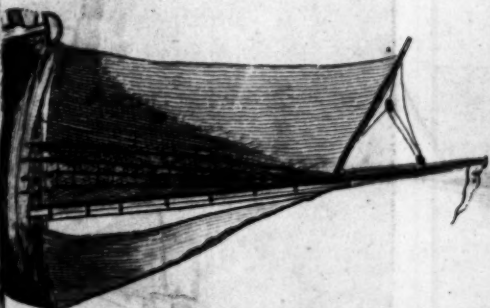
A MAN OF WAR'S PINNACE



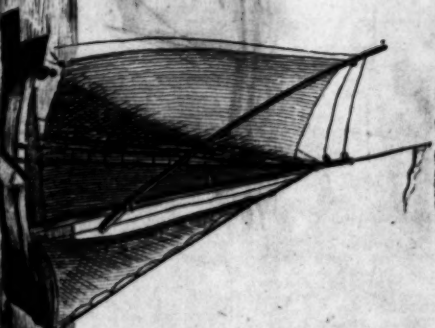
CUTTER



HOY



SAILING BARGE



becket in the arse of the single-block, and makes fast with a bend, and the end seized up.

SHROUDS, four pairs, are fitted and got over the mast-head, similar to those in ships. The after-shroud on each side is wormed, parcelled, and served with spunyarn, down to the dead-eye.

The STAY is fitted and got over the mast-head, similar to that in ships; only wormed its whole length.

PREVENTER-STAY, similar to ships.

The STAY sets up with a dead-eye, turned into the lower end of the stay with a running or Flemish eye, and with a laniard, reeved through the holes in the dead-eye, and through holes bored through the head of the stem.

The PREVENTER-STAY sets up with a laniard, reeved through the holes in the dead-eye in the lower end of the stay, and another dead-eye in an iron-bound strap, bolted on the fore-part of the stem.

RIGGING THE BOWSPRIT.

The SHROUDS are fitted with a hook and thimble, spliced at one end, that hook to an eye on each side of a square hoop driven on the end of the bowsprit. The inner end has an iron thimble turned in, and sets up by a laniard to an eye-bolt on each side of the bow, and the end secured with hitches. Sloops have HORSES, similar to jib-boom horses of ships, and sometimes ratlings.

MAIN-JIB TACK is clinched through the swivel-eye in the traveller on the bowsprit, then reeves through a sheave-hole in the end of the bowsprit, and through an iron-bound block, hooked and mouised to an eye-bolt in the side of the stem near the water, and then brought to the windlass over the bow, and hove out: then stopt and belayed round a timber-head.

HALIARDS reeve through the block lashed to the head of the sail, and through the block on each side the mast-head. One end has a treble-block spliced or turned in, and connects by its fall to a double-block, that hooks to an eye-bolt in the deck on one side, and the other end belays to an eye-bolt opposite.

SHEETS are either single or with blocks and falls. Sheets, single, are bent to the clue of the sail, and lead over the bow to the wind-

lafs; the double-sheets have two double-blocks lashed to the clue of the sail, and connect by their falls to a single-block, hooked to an eye-bolt near the cat-head, on each side. The falls lead in upon deck through a hole in a timber-head, or a leading-block lashed on each side.

DOWNHAULER makes fast to the head of the sail, and leads upon deck.

INHAULER makes fast to the traveller, and leads in upon deck.

HEEL-ROPE reeves through a leading-block, hooked to an eye-bolt in the bow, then through a sheave-hole in the heel of the bowprit, and the standing-part makes fast to a timber-head or eye-bolt, and the leading-part is connected to the windlafs.

RIGGING THE FLYING-JIB.

The **FLYING-JIB**, fimilar to the main-jib.

RIGGING THE FORE-SAIL.

The **FORE-SAIL** bends with hanks to the stay.

HALIARDS reeve through a block, lashed underneath the collar of the stay at the mast-head, and a block lashed to the head of the sail: the standing-part makes fast round the mast-head, and the leading-part comes down upon deck.

DOWNHAULER reeves through the hanks, and bends at the head of the sail, then reeves through a leading-block, made fast to the stay at the foot of the sail, and belays to a cleat on the gunwale.

TACK-TACKLE. The block is hooked to the tack of the sail, and connected by its fall to a block, made fast under the stay to an eye-bolt in the bow, and belays to the cross-piece of the windlafs.

BOWLINES. A hook is spliced in one end, that hooks to the clue; then reeves through a block, lashed to the shrouds on each side, and through a cringle in the leech of the sail, and belays round a pin in the shroud-rack.

SHEETS reeve through a block made fast to the horse with a thimble, or, in some sloops, a dead-eye iron-bound, and through a block at the clue, and so on, alternately, between the strap of the block

block and the seizing or dead-eye; then through the thimble at the clue, till the whole sheet is expended; then frapped together and hitched.

RIGGING THE BOOM.

TOPPING-LIFT is taken upon the starboard-side, and reeved through the upper block, hooked to an eye-bolt in the mast-head; then led down and reeved through the block at the boom-end. The standing-part clinches round the mast-head, or hooks to the same eye-bolt; the leading-part comes down, and has a double-block spliced or turned in, that connects by its fall to a single-block, and hooks to an eye-bolt in the after-part of the channel, and belays to a pin in the shroud-rack. Sometimes it has the addition of a runner, and sometimes is rigged as the driver-boom in ships.

SHEETS reeve through a double-block, strapped round the boom just within the taffarel, and through another double-block, strapped round the horse; and belay round a large cleat on the taffarel. Very large cutters have a treble-block at the horse.

TACK-TACKLE. The double-block is fastened to the tack of the sail, and connects with its fall to a single-block hooked to an eye-bolt in the deck.

REEF-PENDENTS, or EAR-RINGS, four in number, reeve through four holes in the outer end of the boom, and have a thimble spliced in one end, wormed and served with spunyarn nearly their whole length. The other end reeves through its respective reef-crinkle on the after-leech; and, when a reef is to be taken in, it is cat's-pawed on to the hook of a luff-tackle, to haul down the leech of the sail; and afterwards fraps round the sail and boom, till expended, and makes fast with a hitch. It is common to put old hammocks under the pendants between that and the sail.

GUY-PENDENTS have a hook and thimble, that hook in a thimble of a strap on the boom, just without the main-sheet block. In the inner end of the pendent is a thimble, or long eye spliced, to which is hooked a luff-tackle. Its single-block is hooked near the windlafs to a timber-head or eye-bolt, and the fall leads in board.

MAIN-

MAIN-SHEET. One block straps round the boom near the taffarel, and is confined by a comb-cleat. The other block is strapped with a thimble, and traverses upon an iron horse, secured to the inside of the taffarel, and they are connected by the sheet or fall which belays round a large cleat on the taffarel, or the pin of the block in small vessels.

TYE, or HALIARD, reeves through a block on the span, that clinches or splices round the middle of the gaff. The standing-part of the tye clinches round the mast-head, or hooks to an eye-bolt in the mast-head: the other end reeves through a second iron-bound block, hooked to an eye-bolt in the mast-head, and at the lower end is the double-haliard block, that does not splice as other haliards, but reeves through the strap, and makes fast with a hitch; and the remainder is expended in turns round the block and strap. The haliard-block connects by its fall to a single or double block, hooked to an eye-bolt in the deck, close behind the mast.

INNER-TYE is similar to the outer-tye, and hooks to an eye-bolt in the jaws of the gaff; then reeves through the lower iron-bound block, that hooks to an eye-bolt in the aft-side of the mast-head, below the rigging. It has a double-block bent to the lower end, and sets up by the haliards; the lower block hooking to an eye-bolt on the opposite side to the other tye.

PEEK-DOWNHAULER reeves through a small block, strapped round the thimble, in the eye-bolt at the outer end of the gaff, and belays round a cleat under the boom.

THROAT-DOWNHAULER reeves through a block at the nock of the sail, and leads down the mast.

RIGGING THE TOPMAST OR TOPGALLANT-MAST.

SHROUDS are fitted and go over the mast-head as a ship's topgallant-mast shrouds, and thimbles are seized in them, in the upper-part, for the lifts, and reeve through the holes in the ends of the cross-trees; then come down upon deck, and set up with a thimble and laniard round the lower dead-eyes.

STAY splices with an eye to the size of the mast-head; the lower end reeves through the middle-sheave of a treble-block, lashed round the bowsprit-end underneath, and leads to an eye-bolt near the

the stem, to which it sets up with a laniard, through a thimble turned into its end.

STANDING-BACKSTAYS, if one pair, go over the mast-head with a cunt-splice: if two pair, with eyes seized, and in the lower end a thimble, and set up with a gun-tackle purchase, hooked to a thimble of a strap round the lower dead-eyes, and sometimes with a laniard and thimbles.

RIGGING THE CROSS-JACK YARD.

TOP-ROPE, similar to ships.

QUARTER-BLOCK is strapped with a double strap, having a long and short leg; and is fixed in the middle of the yard between the cleats: the long leg comes up the aft-side of the yard, and meets the bight of the short leg on the fore-side, and there lashes through the bights.

STRAPS, with a thimble seized in the bight, are spliced or lashed through eyes round the middle of the yard: the thimble in one strap is fixed on the aft-side of the yard, the other thimble on the upper-side of the yard.

CLUE-LINE BLOCKS are lashed with two eyes round the yard, as ships. Some sloops and light-rigged vessels have no clue-line blocks: they lower the yards.

HORSES go over the yard-arm with an eye, as in ships.

BRACE-PENDENTS, as ships' **AFTER-BRACE PENDENTS**, go over the yard-arm with an eye.

SHEET-BLOCK straps in the lift with a splice, and a bight is seized in the lift to the size of the yard-arm, and goes over it next the braces. Merchant-vessels sometimes have their topfail-sheets fitted in the same manner.

FORE-BRACES reeve through the pendent-block. The standing-part goes out, and clinches round the outer end of the bowsprit; the leading-part reeves through a sheave, on one side of the treble-block, out at the end of the bowsprit, and comes in upon deck.

AFTER-BRACES lead in upon the quarter, through a snatch-block, or a sheave-hole in the side; and belay to a cleat or timber-head.

LIFTS

LIFTS reeve through a span-block round the cap or mast-head, and lead down upon deck.

TACKLE, or **HALIARD**, for swaying up the yard, is either treble or double, according to the size of the vessel. The upper block hooks to an eye-bolt in the fore-side of the mast-head, or to a strap round the mast. The lower blocks hook to the thimble in the strap, on the middle of the yard; the fall reeves through a sheave-hole in the topfail-sheet bitts, and leads aft.

HORSE lashes round the mast-head, with an eye spliced in the upper end, and sets up with dead-eyes and a laniard below.

RIGGING THE TOPSAIL-YARD.

TYE reeves from aft, through the sheave-hole in the mast-head, comes down, and clinches round the slings of the yard: the other end has a double-block spliced, that connects by its fall to a single-block hooked in the channel; the fall leads through a leading-block on the gunwale, and belays to a cleat or timber-head.

CLUE-LINE BLOCKS, HORSES, BRACE-PENDENTS, and LIFTS, go on the yard as ships.

LIFTS reeve through a thimble in the topmast-shrouds, and come down upon deck.

BRACES reeve through the pendent-block, and the standing-part goes out, and clinches round the bowsprit-end; the leading-part reeves through one of the sheave-holes of a double-block at the bowsprit-end, leads in upon deck, and belays where most convenient.

BOWLINES reeve through a thimble in a strap over the bowsprit-end; and go on the bridle at the fail, as in ships: the leading-part comes in upon deck.

RIGGING THE MAIN-SAIL.

The **MAIN-SAIL** bends at the head to the gaff with ear-rings and lacing, as the ship's mizen; and is seized to the hoops round the mast, through the holes in the foremost leech.

THROAT-DOWNHAULER. The double-block hooks to the eye under the throat of the gaff, that connects by its fall to a single-block,

block, hooked to a thimble, seized in the bight of a strap round the mast under the boom-saddle.

TRICING-LINE reeves through a small block made fast to the above eye-bolt in the gaff: one end splices to the tack of the sail; the other leads down upon deck, and belays to a cleat near the mast.

SHEET-ROPE splices into the clue of the sail, and reeves through the sheave-hole in the boom; and a thimble is turned into the inner end, to which hooks the sheet or luff tackle, and the inner-block to a strap round the boom near the jaws. When the sail is hove out, it is lashed with an ear-ring through the clue, and an eye-bolt in the boom-end.

RIGGING THE TRYSAIL OR STORM MAIN-SAIL.

This sail bends as the main-sail, and may be rigged with the same materials, if no other allowed; but mostly with sheets, and no boom, but like a ship's mizen.

RIGGING THE SQUARE-SAIL OR CROSS-JACK.

This sail bends similar to a ship's main or fore course.

BOWLINES reeve through a sheave in the double-block on the bowsprit-end, and on the bridle at the sail, the same as a ship's. The leading-part comes in upon deck, and belays round the bitts.

RIGGING THE TOPSAIL.

The **TOPSAIL** bends as the ship's topsail, and rigs similarly.

TOPGALLANT-SAIL sets flying like a ship's royal.

RIGGING THE GAFF-TOPSAIL.

The **GAFF-TOPSAIL** laces to a small gaff at the head.

HALIARDS reeve through a sheave-hole at the topgallant-mast head, and bend to the inner-part of the gaff: the leading-part comes down upon deck.

TOPPING-LIFT reeves through a sheave-hole or small block, seized to the topgallant-mast head, then through a thimble or small block seized at the outer end of the gaff: the standing-part makes

T

fast

fast round the topgallant-mast head, above the sheave-holes, and the leading-part comes down upon deck.

TACK makes fast the tack of the sail, a little above the rigging.

SHEET reeves through a thimble seized at the peak of the main-sail, and bends to the clew of the sail, and leads down upon deck.

RIGGING THE LOWER STUDDINGSAILS.

These sails bend as a ship's, and are set flying like a ship's fore-studding-sail.

RIGGING THE TOPMAST-STUDDINGSAILS.

The TOPMAST-STUDDINGSAILS bend nearly as a ship's.

HALIARDS reeve through single-blocks, made fast round the mast-head, above the rigging: one end reeves through the jewel-block, and bends to the yard; the other end leads down upon deck.

SHEETS and **TACKS**, as a ship's.

RIGGING THE RINGTAIL-SAIL.

The RINGTAIL-SAIL is similar to a topmast-studding-sail, and bends to a small yard on the head, and hoisted by the peek-down-hauler, which serves for haliards. The foot is expanded on a spar, or small boom, lashed to the outer end of the main-boom.

RIGGING THE MIZEN.

The MIZEN is set on a small mast over the stern. If a square-sail, it bends to a yard, and is hoisted by haliards reeved through the mast-head, and is spread by sheets at the foot. If a spritsail, it bends to the mast with grommets, and is peeked with a sprit; and the foot hauls aft by the sheet to a small boom.

RIGGING THE WATER-SAIL.

The WATER-SAIL is similar to a lower studding-sail, and bends on the head to a small yard.

HALIARD reeves through a small block under the outer end of the main-boom, comes in and makes fast to the middle of the yard, and the leading-part round a cleat on the taffarel.

SHEETS

SHEETS make fast to the clues of the sail, and lead in over the quarters.

RIGGING THE HAVE-ALL-TOP-SAIL.

The **CLUES** lash near to the lift-block of the cross-jack yard.

HALIARDS bend to the ear-rings of the sail, and reeve to a block on each quarter of the top-sail-yard, and lead down upon deck.

RIGGING OF SLOOPS AND SMACKS.

SLOOPS and **SMACKS** are vessels with one mast, and rig as cutters, but much lighter.

RIGGING OF HOYS AND LIGHTERS.

HOYS and **LIGHTERS** are vessels with one mast, and sometimes a bowsprit; abaft the mast is a gaff-main-sail, before it a fore-sail, and a jib upon the bowsprit. The little rigging they have is similar to sloops.

RIGGING OF SAILING-BARGES.

SAILING-BARGES are vessels with one mast, and sometimes a bowsprit. Those that have boom-sails are rigged similar to sloops; but, having few hands on board, the boom and gaff are more easily hoisted or topped, the power being increased by the addition of blocks.

The **BOOM-TOPPING LIFT** is a long pendent, that goes over the outer end of the boom, with an eye spliced in one end, and in the other end is spliced a double or single block, that connects by its fall to a single-block, hooked in an eye-bolt at the upper-part of the mast-head; and the fall leads down to the shrouds at the side, and sometimes rigged similar to a ship's driver-boom or cutter's main-boom.

TYE or HALIARDS of the gaff are rigged to the fancy and ease of the master, &c. The standing-part is fastened to the arse of a standing-block, hooked to an eye-bolt in the mast-head, next below the topping-lift; then reeves through a single-block on the span at the peek; then carried up; and reeves through the block near where the standing-part is made fast; then through another block, on a span near the middle of the gaff, and leads up again, and reeves through another single-block, hooked to an eye-bolt in the mast-head, below the other block or standing-part, and leads down upon deck; sometimes the standing-part goes over the mast-head, with an eye spliced in the end; then reeves through a block at the peek-end of the gaff, and then through a single-block at the mast-head, below the standing-part; and then through a single-block on a span near the peek; lastly, through another block at the mast-head, below the former block; and then leads down upon deck. The tye has mostly haliards in the lower end, like the cutters.

SAILING-LIGHTERS or BARGES, with a sprit-main-sail, rig with a sprit-yard at the head of the sail, hanging diagonally to the mast.

The **SHROUDS** and **RUNNER-PENDENTS** go over the mast-head, with eyes spliced at the ends, or with bights seized close to the mast; and rest upon a trudding or grommet, drove down to the stops on the mast-head.

The **STAY** goes over all with a running-eye, and sets up with a large three or four fold tackle: the upper block hooks in a large thimble, turned into the lower end of the stay, or is itself turned into the lower end of the stay, and the lower block is secured to the stem, by hooking into a large strap, for lowering the mast.

The **STAY or STANDING-MAST** is set up with a dead-eye or block, in the lower end, and holes through the head of the stem.

SPRIT-

SPRIT-YARD PENDENT. One end splices to a collar or grommet, that is spliced round the middle of the sprit-yard; the other end reeves through a block at the mast-head, comes down, and then a thimble is spliced in, and served over the splice: in this thimble hooks a double-block, (in large barges,) that connects by its fall a double-block, hooked to an eye-bolt in the deck: a luff-tackle is used in small barges.

STANDING-LIFT, to top the sprit-yard up, goes with an eye spliced in the end over the lower end of the yard; then leads through a block at the mast-head, has a thimble spliced in the end, to which hooks a double or luff-tackle block, and the lower-block hooks to an eye-bolt in the deck or side.

VANGS. Some large barges have vangs like a ship's mizen, and a downhauler at the peek-end of the sprit-yard.

HALIARDS or TRICING-LINE make fast to the grommet at the nock of the sail, and reeve through a block at the mast-head, and lead down upon deck.

The **SPRITSAIL** is bent to hoops, that slide on the mast above the frotter, and to hanks below it, that slide on a horse abaft the mast: the tack is secured with several turns round a cleat on the mast, or eye-bolt in the deck, and through the thimble in the tack of the sail. The turns are frapped together, and the end hitched: the nock is secured in a similar manner to a grommet, incircling the mast: the peek is extended to the upper extremity of the sprit-yard, by its going through the peek.

SHEET. One end bends to the clue of the sail, the other reeves through a block that traverses on an iron or wood horse (fixed athwart the vessel near the stern), and again reeves through a block, hooked to a thimble in the after-leech of the sail, four feet above the clue; then leads aft, and belays round the pin of the block on the horse.

BRAILS are made fast to cringles on the after-leech of the sail, then lead upon each side of the sail, and reeve through small blocks, seized into the head-rope, and then through blocks lashed to the upper-part of the shrouds on each side; and lead down through trucks seized to the shrouds below the middle, and belay round pins in the shroud-rack.

BRAILS

BRAILS go with two short legs; one spliced in the head-rope near the nock, the other about four feet up the head: the leading-part comes down one side of the sail, and reeves through a tringle, on the after-leech, five or six feet above the clue, and comes upon the other side, and reeves through a block, seized to the nock of the sail, and leads down by the mast.

THROAT-DOWNHAULER splices to the nock of the sail, and leads down by the mast.

HORSE is a rope that goes with an eye over the mast-head, and sets up with a laniard through dead-eyes; one of which is spliced in the lower end of the horse, and the other hooks to an eye-bolt near the heel of the mast.

SNOTTER is made of two or more turns of a rope, spliced at the ends, and marled closely together, to the circumference of the mast and lower end of the sprit-yard; then served with spunyarn, and covered with leather, and a seizing clapped on, between the mast and lower end of the sprit-yard, which rests in the grommet, by the stop or shoulders made at the end, when the sail is hoisted.

LARGE BARGES have a fore-sail, jib, cross-jack yard, and top-sail, similar to sloops.

SLOOPS, SMACKS, BARGES, and LIGHTERS, that go through bridges, have the mast confined in a trunk or wooden cap, above the deck, and fastened in by an iron strap on the aft-side. Some have a strong iron hinge at the heel of the mast, or a bolt through the heel; so that it can be lowered at pleasure, by the stay-tackle easing away the fall by degrees. To raise the mast, the fall is brought to the windlass, and hove upon, until the mast is up in its place: the fall is then stopped to the windlass-bitts.

RIGGING OF SHIPS' LONG-BOATS, OR LAUNCHES.

They are often rigged like small sloops or schooners.

RIGGING OF SHIPS' PINNACES AND ROWING-BARGES.

These sometimes have latteen-fails, and rig with a sliding-gunter, like houarios, or bend to yards, and hoist with

HALIARDS, that reeve through a sheave-hole in the mast-head: one bends to the flings of the yard, on the fore-part of the mast, and the other end belays abaft the mast.

SHEETS bend to the clue of the sail, and lead aft.

SPRITSAILS, similar to those in sailing-barges, are sometimes used.

RIGGING OF SHIPS, CUTTERS, OR YAWLS.

These sometimes have lug-fails, and rig with a

HALIARD, like the pinnace.

SHEET and **TACK**, like the lugger.

EXPLANATION OF THE PROPORTIONS.

Rule—Take the number of feet contained in the length of the bowsprit, &c. then find the proportional part for any of the rigging, observing to reckon inches for feet. Thus, suppose a yard is wanted to know the length of rope necessary for the working of a twenty-gun ship, the following table sheweth that it should be twice the length of its bowsprit: therefore, suppose the length of the bowsprit to be 60 feet, twice that

PROPORTIONS

S. R. Wherever there is a fractional proportion as three-eighths, &c. given, it only requires the length of the bowsprit, &c. to be multiplied by the lesser number, called the numerator, and that

These sometimes have lattice-falls, and rig with a sliding-gunter, like howdahs, or bend so yards, and half with Hallards, that receive through a massive hole in the mast-head; one bends to the rings of the yard, on the fore-part of the mast, and the other end delays about the mast.

Sheets bend to the chue of the fall, and lead aft. Sennets, similar to those in sailing-barges, are sometimes used.

RIGGING OF SHIPS, CUTTERS, OR TAWERS. These sometimes have lug-falls, and rig with a Hallard, like the pinnace, or a bend so yards, and half with a Tack, like the lugger.

PROPORTIONS. They are in such kind and degree as to be

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PROPORTIONS

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STANDING AND RUNNING RIGGING

OF ALL

S H I P S,

CALCULATED FROM THE LENGTH OF THEIR MASTS
AND YARDS.

EXPLANATION OF THE PROPORTIONS.

Rule.—Take the number of feet contained in the length of the bowsprit, &c. then find the proportional part for any of its rigging, observing to reckon fathoms for feet. Thus, suppose it were required to know the length of rope necessary for the woolding of a bowsprit of a twenty-gun ship; the following tables direct that it should be twice the length of its bowsprit: therefore, suppose the length of the bowsprit to be 60 *feet*, twice that length is 120, that is 120 *fathoms*.

N. B. Wherever there is a fractional proportion as three-eighths, &c. given, it only requires the length of the bowsprit, &c. to be multiplied by the lesser number, called the numerator, and that

U

product

product divided by the larger number, or denominator; thus, the three-eighths of the bowsprit is $22 \frac{1}{2}$ fathoms.

60 feet

Multiplied by 3 numerator

Divided by the denominator 8)180

Fathoms $22 \frac{1}{2}$ or $\frac{1}{2}$

RIGGING TO THE BOWSPRIT.

WOOLDING	Twice and a half the length of the bowsprit in large, and twice in small, ships.
GAMMONING	Twice and a quarter the length of the bowsprit if two, and one and a half if one, gammoning.
SHROUDS	Half the length of the bowsprit if two pair, and a quarter if one pair.
Collars	One-third the length of the shrouds.
Seizings	Once and a half the length of the collars.
Lashings	One fathom longer than the collars.
Laniards	Twice the length of the collars.
BOBSTAY	Half the length of the bowsprit if three pair, and one-third if two pair.
Collars	One quarter of the length of the bobstays.
Seizings	The length of the bobstays.
Lashings	One fathom longer than the collars.
Laniards	Twice the length of the collars.
HORSES	Two-sevenths of the length of the bowsprit.
Straps	One-fifth of the length of the horses.
Laniards	Three-eighths of the length of the horses.

RIGGING TO THE SPRITSAIL-YARD.

HORSES	One-fifth of the length of the yard.
Stirrups	Half the length of the horses.
BRACES	Once and a quarter the length of the spritsail-yard.
Pendants	One-twelfth of the length of the braces.
Strapping	One-seventh of the length of the braces.

LIFTS	Seven-eighths of the length of the spritfail-yard.
Beckets	Four fathoms in ships of the line, and two in other ships.
Strapping	The same length as the beckets.
Seizing	Twice the length of the strapping.
Standing	One-sixth of the length of the lifts.
Straps	Half the length of the standing-lifts.
Laniards	Three-fourths of the length of the standing-lifts.
HALIARDS	Three-fifths of the length of the spritfail-yard.
Strapping	Three fathoms in ships of the line, and two in other ships.
Seizing and Lashing	One-fifth of the length of the haliard.
SLINGS	One-tenth of the length of the spritfail-yard.
Seizing and Racking	Twice the length of the slings.
CLUE-LINES	Two-thirds of the length of the spritfail-yard.
Strapping	One-eighth of the length of the clue-lines.
BUNT-LINES	Half the length of the spritfail-yard.
Strapping	One fathom.
EAR-RINGS	One-fourth of the length of the spritfail-yard.
SHEETS	Five-eighths of the length of the spritfail-yard.

RIGGING TO THE JIB-BOOM.

HORSES	Two-fifths of the length of the jib-boom.
Seizings	The length of the horses.
GUY-PENDENTS and } STRAPPING . . . }	Five-eighths of the length of the jib-boom.
Falls and } Strapping . . . }	Two fathoms longer than the pendants.
Lashers	Half the length of the pendants.
OUTHauler	One-fourth of the length of the jib-boom.
Tackle-Fall	Five-eighths of the length of the jib-boom.
Strapping	One fathom.
STAY	Five-eighths of the length of the jib-boom.
Strapping	One fathom.
Tackle-Fall and } Strapping . . . }	Half the length of the jib-boom.
HALIARD and STRAP- } PING }	Once and a half the length of the jib-stay.
DOWNHAULER	Seven-eighths of the length of the haliard.
SHEETS	Seven-eighths of the length of the jib-boom.
Pendants	One-fourth of the length of the sheets.
FLYING-JIB HALIARD	Once and a half the length of the fore-topgallant stay.
Sheets	The length of the jib-boom.
Tack	Two fathoms.
Downhauler	Seven-eighths of the length of the haliard.

RIGGING OF THE SPRITSAIL-TOPSAIL YARD.

HORSES	One-fifth of the length of the sprit-topfail yard.
BRACES	Once and three-eighths of the length of the sprit-topfail yard.
LIFTS and STRAPPING .	Once the length of the sprit-topfail yard.
HALIARD and STRAP- PING }	Three-fourths of the length of the sprit-topfail yard.
Lashing	One-fourth of the length of the haliards.
PARRAL-ROPE	One-tenth of the length of the sprit-topfail yard.
CLUE-LINES and STRAPPING }	Once and a quarter the length of the sprit-topfail yard.
LACING & EAR-RINGS .	Once the length of the sprit-topfail yard.

RIGGING TO THE FORE-MAST AND FORE-YARD.

WOOLDINGS	Twice and three-fourths of the length of the fore-mast in large, and twice and a half in small.
GIRT-LINES	Three-fourths of the length of the fore-mast.
Strapping	Two fathoms.
Seizing	One-twelfth of the length of the girt-lines.
Lashings	One-fourth of the length of the girt-lines.
PENDENTS of TACKLES .	One-fifth of the length of the fore-mast if two pair, and one-tenth if one pair.
Strapping	One-fifth of the length of the pendants if two pair, and one-third if one pair.
Seizing	Half the pendants if two pair, and once and a quarter the length if one pair.
RUNNERS of TACKLES .	Twice the length of the pendants if two pair, and four times if one pair.
Strapping	One-fifth of the length of the runners if two pair, and one-tenth if one pair.
FALLS of TACKLES . .	Twice the length of the fore-mast if two pair, and once if one pair.
Strapping	One-tenth the length of the fore-mast if two pair, and one-twentieth if one pair.
Seizing	Four times the strapping.
SHROUDS }	Twice and a quarter if ten pair.
Length of the first warp }	Twice the length of the fore-mast if nine pair, and once and three-fifths if seven pair.
N. B. The length is taken from the upper-side of the bolsters on the trestle-trees to the fore-most dead-eye in the channel, or from the middle of the opposite side of the mast-head down to the deck.	

SEIZINGS.

SEIZINGS.	{	Eye	One-fourth the length of the shrouds.
		Throat . . .	Half the length of the shrouds.
		End	Half the length of the shrouds.
		Laniards	Five-eighths of the length of the shrouds.
		Ratlings	Once and five-eighths of the length of the shrouds.
STAY			One-seventh of the length of the fore-mast, in fathoms.
		Seizings	Once and a half of the length of the stay.
		Laniard	The length of the stay.
		Collar	Half the length of the stay.
		Seizings	Once and a half of the length of the collar.
		Lashing	Three-fourths of the length of the collar.
PREVENTER-STAY			The length of the fore-stay.
		Laniard	Two-thirds of the length of the stay.
		Collar	Half the length of the stay.
		Lashing	The length of the collar.
		Seizings	Twice and a half the length of the collar.
CATHARPIN-LEGS			One-sixth the length of the fore-mast when six, and one-eighth if four, in number.
		Seizings	Four times the length of the catharpin-legs.
JEERS	{		Tye and Falls. In large ships with treble and double blocks, the falls are once and a quarter the length of their mast. If with double-blocks, the length of the mast; and, when with a tye, the tye is one-fifth the length of the mast, and the falls the length of the mast.
		Strapping	One-fourth of the length of the mast.
		Seizing	One-third of the length of the mast.
		Maft-head.	Three-eighths of the length of the fore-mast.
Lashers.	{	Yard	One-third of the length of the mast-head lashing.
		Stoppers	Half the length of the yard-lashing.
HORSES			One-sixth of the length of the fore-yard.
		Stirrups	The length of the horses.
		Seizings	The length of the horses.
		Laniard	One-third of the length of the horses.
YARD-TACKLE PEN-	{		
DENTS			One-tenth of the length of the fore-yard.
		Falls	The length of the fore-yard and pendants.
		Strapping	The length of the pendants.
		Seizing	Twice the length of the strapping.
Inner Tricing-	{		
Lines			Three-sevenths of the length of the fore-yard.
Outer Tricing-	{		
Lines			Three-sevenths of the length of the fore-yard.
		Strapping	One-sixth of the length of outer tricing-lines.

BRACES

BRACES	Once and one-sixth of the length of the fore-yard.
Pendants	One-eighth of the length of the fore-yard.
Preventer ditto	One fathom longer.
Strapping	Half the length of the pendants.
Seizing	One-fifth of the length of the fore-yard.
Lashing	One-fourth of the length of the fore-yard.
BRACES, PREVENTER, } in war only }	Seven-eighths of the length of the other braces.
Strapping	Three fathoms in large, and two in small, ships.
Seizing	Ten fathoms in large, and six in small, ships.
LIFTS and STRAPPING .	Once and a quarter of the length of the fore-yard.
Seizing	One-sixth of the length of the fore-yard.
Span for the Cap	One-tenth of the length of the fore-yard.
Short Span	One-third of the length of the span for the cap.
Jigger-Tackle . .	From twenty to thirty fathoms.
Strapping	One-eighth of the length of the tackle.
TRUSS-PENDENTS . . .	One-fifth in large, and one-sixth the length of the fore-yard in small, ships.
Falls	Five-eighths of the length of the fore-yard.
Strapping	One-third of the length of the pendants.
Eye-Seizings . . .	Three times the length of the strapping.
Nave-Line	One-fifth of the length of the fore-yard.
PUDDENING the YARD .	Twelve fathoms in large, and six in small, ships.
CLUE-GARNETS	Three-fourths of the length of the fore-yard.
Straps about the Yard.	One-eighth of the length of the clue-garnets.
Strapping	Two fathoms in large, and one in small.
Seizing	One-fourth of the length of the clue-garnets.
Lashing	One-sixth of the length of the clue-garnets.
BUNTLINE-LEGS	Four-sevenths of the length of the fore-yard.
Falls	The length of the legs.
Strapping	One-fourth of the length of the falls.
LEECH-LINE LEGS . . .	The length of the buntline-legs.
Falls	The length of the buntline-falls.
Strapping	The length of the buntline-strapping.
SLAB-LINES and } STRAPPING }	Three-sevenths of the length of the fore-yard.
BOWLINES	Two-thirds of the length of the fore-yard.
Bridles	One-tenth of the length of the bowlines.
Strapping	Three-fourths of the length of the bridles.
Seizing	Twice the length of the bridles.
Lashing	As long as the seizing.
EAR-RINGS	One-third of the length of the fore-yard.
SHEETS and STAFFING .	The length of the fore-yard.
Seizings	One-sixth of the length of the fore-yard.
Stoppers	One-third of the length of the seizing.

TACKLES,

TACKS, single	Half the length of the fore-yard.
TACKS, double	Once and three-fourths of the length of single tacks.
Strapping	One-eighth of the length of the tacks.
Seizing	One-fifth of the length of the tacks.
Stoppers	The length of the strapping.
Laniards	The length of the stoppers.
GAMMONING the BUMKIN }	Sixteen fathoms in large, and ten fathoms in small, ships.
Laniard	Twelve in large, and six in small.
SLINGS	One-tenth of the length of the fore-yard.
Strap	Half the length of the slings.
Seizings	Twice the length of the slings.
Laniard	Three-fourths of the length of the slings.
STAYSAIL-HALIARD	Twice the length of the preventer-stay, and two fathoms.
Sheets	Twice the length of the preventer-stay.
Strapping	One-third of the length of the preventer-stay.
Tack	Two fathoms.
Downhauler	Twice the length of the preventer-stay.
Strapping	One-third of the other strapping.
STUDDINGSAIL-HA- LIARDS, Inner }	Three-fifths of the length of the fore-yard.
Ditto, Outer	The length of the fore-yard.
Sheets	One-sixth of the length of the fore-yard.
Tacks	Five-sevenths of the length of the fore-yard.
Strapping	The length of the sheets.

RIGGING BELONGING TO THE FORE-TOPMAST.

BURTON-PENDENTS	One-ninth of the length of their topmast.
Falls	The length of their topmast.
Strapping	Three-fourths of the length of the pendants.
SHROUDS, first warp	Seven-eighths of the length of their topmast, in feet.
Whole length	Twice the length of the first warp for every pair.
Seizings. { Eye	One-fourth of the whole length of the shrouds.
{ Throat	Once and three-fourths of the length of the eye-seizings.
{ End	Once and a half the length of the eye-seizing.
Laniards	Two-thirds of the whole length of the shrouds.
Ratling	Once and three-eighths of the whole length of the shrouds.
STANDING-BACK- STAYS, first warp }	Twice the length of their topmast, in feet.
Whole length	Twice the length of the first warp for every pair.
Seizings. { Eye	One-eighth of the whole length of the backstays.
{ Throat	Once and three-fourth of the length of the eye-seizings.
{ End	Once and a half the length of the eye-seizings.
Laniard	One-fifth of the whole length of the backstays.

BREAST-

BREAST-BACKSTAY	}	One-sixth of the length of their topmast, in fathoms.
RUNNERS		
Falls		One-third of the length of their topmast.
Strapping		One-sixth of the length of the falls.
STAY		Two-fifths of the length of its topmast.
Collar		One-sixth of the length of its stay.
Tackle		The length of its stay.
Strapping		One-seventh of the length of its tackle.
Seizing		Twice the length of the strapping.
PREVENTER-STAY		The length of its topmast-stay.
Collar		One-eighth of the length of its stay.
Tackle		The length of its stay in large ships, and seven-eighths of its stay in small ships.
Strapping		One-sixth of the length of its tackle.
Seizing		Three times the strapping.
Lashing the Collar		One-fourth of the length of the stay.
SHIFTING-BACKSTAY		Five-eighths of the length of its topmast.
Tackles		Three-fourths of the length of its topmast.
Strapping		One-fourth of the length of its stay.
FUTTOCK-SHROUDS		Three-eighths of the whole length of the topmast-shrouds.
Seizings, Upper		Once and a quarter the length of the futtock-shrouds.
Lower		Seven-eighths of the length of the upper-seizings.
Ratlings		Once and a quarter the length of their shrouds.
TOP-ROPE PENDENTS		Two-thirds of the length of their topmast.
Falls		Three times and a quarter in large ships, and twice and a quarter in small, the length of their pendants.
TYE		Three-fourths of the length of its topmast.
Strapping		One-fifth of the length of the tye.
Seizing		Once and a half the strapping.
Lashers	{	One-fifth of the length of its topmast.
		Half the mast-head lashing.
HALIARDS		Twice the length of their topmast.
Strapping		One-seventh of the length of the topmast.
Seizing		Twice the strapping.

RIGGING BELONGING TO THE FORE-TOPSAIL YARD.

HORSES	One-fifth of the length of their yard.
Stirrups	Three-fourths of the length of their horses.
BRACES	Once and two-thirds of the length of their yard.
Pendants	One-sixth of the length of their yard.
Preventer	One fathom longer.
Strapping	Half the length of the pendants.

LIFT

LIFTS	Once and one-eighth of the length of their yard.
Beckets	Three fathoms in large, and two fathoms in small, ships.
Strapping	Three times the length of the beckets.
Seizing	Three times the strapping.
PARRAL-ROPES	One-fifth of the length of their yard.
Racking and Seizing	Once and one-third of the length of the parral-rope.
CLUE-LINES	Once and a half the length of their yard.
Strapping	One-tenth of the length of the clue-lines.
BUNTLINES and STRAPPING	Once and one-fifth of the length of their yard.
LEECH-LINES and STRAPPING	Half the length of their yard.
BOWLINES and STRAPPING	Once and one-tenth of the length of their yard.
Bridles	One-fifth of the length of the bowlines.
Strapping	Two fathoms in large, and one and a half in small, ships.
Lashing	The length of the bridles.
REEF-TACKLE PEN- DENTS	Three-fourths of the length of their yard.
Falls	The length of their yard.
Strapping	Three fathoms in large ships, and one and a half in small.
EAR-RINGS	Three-fourths of the length of their yard.
SHEETS	Nine-tenths of the length of their yard.
Straps for the Sheet-Blocks	One-tenth of the length of the sheets.
Straps for the Quarter-Blocks	Twice the length of the former, for large, and once and a half the length of the former for small, ships.
Lashers for Quar- ter-Blocks	Twice the sheet-block strapping.
Seizing	Three-eighths of the length of the sheets.
Span	One-sixth of the length of the sheets.
Stoppers	Half the length of the span.
SLINGS	One-fifth of the length of their yard in large ships, and one-sixth of the length of their yard in small.
STAYSAIL-STAY	One fathom longer than the top-stay.
Tackle	Two-thirds of the length of its stay.
Haliard and Strapping	Once and three-fourths of the length of its stay.
Sheets and Strapping	Once and a half the length of its stay.
Outhauler	Seven-eighths of the length of its stay.
Downhauler & Strapping	Once and one-third of the length of its stay.

STUDDINGSAIL-HALLIARDS	} Once and two-thirds of the length of its topfail-yard.
Sheets	Five-sixths of the length of the fore-topfail yard.
Tacks	Once and one-sixth of the length of the fore-topfail yard.
Downhaulers	The length of the fore-topfail yard.
Boom-Tackles	Once and two-fifths of the length of the fore-topfail yard.
Tails	One-third of the length of the fore-topfail yard.
Straps	One-third of the length of the tails.

RIGGING BELONGING TO THE FORE-TOPGALLANT MAST AND YARD.

SHROUDS , length of the first warp	} Once and one-third of the length of the fore-topmast, in feet.
Length of each pair	} Twice the length of the first warp.
Laniards	One-sixth of the length of the shrouds.
STANDING-BACKSTAYS , length of the first warp	} Twice and three-eighths of the length of the fore-topmast, in feet.
Length of each pair	} Twice the length of the first warp.
Laniards	One-fourth of the length of the backstays.
STAY	Six fathoms longer than the topmast-stay.
Strapping	One fathom and a half in large ships, and one fathom in small.
Tackle	Half the length of the stay.
Strapping	One fathom and a half.
FLAGSTAFF-STAY	The same length in large ships, and five-eighths of the length of the topgallant-stay in small.
Haliards	Once and one-eighth longer than the fore-topmast.
TYE	Three-tenths of the length of the fore-topmast.
Haliard	Once and three-fourths of the length of the tye.
Strapping	One fathom and a half in large ships, and one in small.
HORSES	One-fourth of the length of their yard.
BRACES	Three times the length of their yard.
Pendants	One-tenth of the length of the braces.
Strapping	Half the length of the brace-pendants.
LIFTS and STRAPPING	Once and a half the length of their yard.
PARRAL-ROPES	One-eighth of the length of their yard.
CLUE-LINES and STRAPPING	} Twice the length of their yard.

BUNT LINES.

BUNTLINES	Half the length of the clue-lines.
BOWLINES & STRAP- PING	The length of the clue-lines.
Bridles	One-eighth of the length of their yard.
SHEETS	The length of the topfail-yard.
EAR-RINGS	Three-fourths of the length of their yard.
SHIFTING-BACKSTAY .	Half the standing-backstays.
Tackles and Strapping. }	Half of their backstays.
STUDDINGSAIL-HA- LIARDS	Once and one-third of the length of the fore-topmast.
Sheets	Three-fifths of the length of the fore-topgallant yard.
Tacks	Twice and three-eighths of the length of the sheets.
Downhauler . .	Half the length of the fore-topgallant yard.
Strapping . .	One-fourth of the length of the fore-topgallant yard.

RIGGING BELONGING TO THE MAIN MAST AND YARD.

WOOLDINGS	Three times the length of the main-mast in large, and twice and a half the length of the main-mast in small.
GIRT-LINES and STRAPPING	Three-fourths of the length of the main-mast.
Seizings	One-twelfth of the length of the girtlines.
Lashings	One-fourth of the length of the girtlines.
PENDENTS of TACKLES.	One-sixth of the length of the main-mast if two pair, and one-twelfth if one pair.
Strapping	One-fifth of the length of the pendants if two pair, and one-third if one pair.
Seizing	Half the length of the pendants if two pair, and once the length if one pair.
RUNNERS of TACKLES.	Twice the length of the pendants if two pair, and four times the length of the pendants if one pair.
Strapping	Six fathoms in large, and three in small.
FALLS of TACKLES . .	Once and one-eighth of the length of the main-mast if two pair, and once if one pair.
Strapping	One-tenth of the length of the main-mast if two pair, and one-twentieth if one pair.
Seizing	Four times the length of the strapping.

SHROUDS	Twice and a quarter if ten pair.
	Twice the length of the mast if nine pair, and once and three-fifths if seven pair.
	N. B. The length of the first warp is taken from the upper-side of the bolsters upon the trestle-trees to the fore-moſt dead-eye in the channel, or from the middle of the oppoſite ſide of the maſt-head down to the deck.
Seizings. { Eye . .	One-fifth of the length of the ſhrouds.
{ Throat.	Twice the length of the eye-ſeizings.
{ End . .	Twice the length of the eye-ſeizings.
Laniards	Five-eighths of the length of the ſhrouds.
Ratlings	Once and five-eighths of the length of the ſhrouds.
STAY	One-fifth of the length of the maſt, in fathoms.
Seizings	The length of the ſtay.
Laniards	Three-fourths of the length of the ſtay.
Collar	Half the length of the ſtay.
Worming	Five times the length of the collar.
Seizings	Once and three-fourths of the length of the collar.
Lafhing	Twice the length of the collar.
PREVENTER-STAY	Two fathoms leſs than the main-ſtay.
Laniard	Half the length of the preventer-ſtay.
Collar	One-third of the length of the preventer-ſtay.
Lafhing	The length of the collar.
Seizing	The length of the ſtay.
CATHARPIN-LEGS	One-ſeventh of the length of the maſt when ſix, and one-ninth when four.
Seizings	Four times the length of the catharpin-legs.
STAY-TACKLE PENDENT	One-fourth of the length of the main-ſtay.
Falls	Nine times the length of the pendent.
Strapping	Three-fourths of the length of the pendent.
Seizing	Three times the length of the pendent.
Lafhing	Two fathoms leſs than the ſeizing.
FOREMOST STAY-TACKLE FALL	The ſame length as the ſtay-tackle fall.
Strapping	The ſame length as the ſtay-tackle ſtrapping.
Seizing	The ſame length as the ſtay-tackle ſeizing.
JEERS	Tye and Falls. In large ſhips with treble and double blocks, the length of the falls are once and a quarter the length of their maſt. If with double-blocks, the length of their maſt; and, when with a tye, the tye is one-fifth of the length of the maſt, and the falls the length of the maſt.
Strapping	One-fourth of the length of the maſt.
Seizing	One-fourth of the length of the maſt.
Lafhers. { Maſt-head.	Three-eighths of the length of the maſt.
{ Yard . . .	One-third of the length of the maſt-head lafhing.
Stoppers	Half the length of the yard-lafhing.

HORSES	One-sixth of the length of their yard.
Stirrups	The length of their horses.
Seizings	The length of the horses.
Laniard	One-third of the length of the horses.
YARD-TACKLE PENDENTS	One-tenth of the length of their yard.
Falls	Once and one-sixth of the length of the yard in large ships, and the length of the yard in small.
Strapping	The length of the pendants.
Seizing	Twice the length of the strapping.
Inner Tricing-Lines	Three-sevenths of the length of their yard.
Outer Tricing-Lines	Three-sevenths of the length of their yard.
Strapping	One-sixth of the length of the outer tricing-lines.
BRACES and STRAPPING.	The length of their yard.
Pendants	One-tenth of the length of their yard.
Preventer	One fathom longer.
Strapping	One-third of the length of the pendants.
Seizing	The length of the pendants.
BRACES, PREVENTER, in war only	Seven-eighths of the other braces.
Strapping	Three fathoms in large, and two in small.
Seizing	Ten fathoms in large, and six in small.
LIFTS	Once and one-fifth of the length of their yard.
Strapping	Five fathoms in large, and three in small.
Seizing	One-sixth of the length of their yard.
Span for the Cap	One-eleventh of the length of the yard.
Short Span	One-third of the length of the cap-span.
Jigger-Tackles	From twenty to thirty fathoms.
Strapping	One-eighth of the length of the tackle.
TRUSS-PENDENTS	One-sixth of the length of their yard.
Falls	Five-eighths of the length of the yard.
Strapping	One-third of the length of the pendants.
Eye-Seizings	Three times the length of the strapping.
Nave-Line	One-fifth of the length of the yard.
PUDDENING the YARD	Fourteen fathoms in large ships, and six in smaller.
CLUE-GARNETS	Five-sixths of the length of their yard.
Straps about the Yard	One-eighth of the length of the clue-garnets.
Strapping	Two fathoms in large ships, and one in smaller.
Seizing	One-fourth of the length of the clue-garnets.
Lashing	One-sixth of the length of the clue-garnets.
BUNTLIN-LEGS	Half the length of their yard.
Falls	Once and one-sixth of the length of the legs.
Strapping	One-fourth of the length of the legs.

LEECH-LINE LEGS . . .	Four-sevenths of the length of their yard.
Falls	The length of the leech-line legs.
Strapping	The length of the buntline-strapping.
SLAB-LINES and STRAPPING . . . }	Three-sevenths of the length of their yard.
BOWLINES	Three-fifths of the length of their yard.
Bridles	One-fourth of the length of the bowlines.
Strapping	One-fourth of the length of the bridles.
Seizing	The length of the strapping.
Lashing	The length of the strapping.
Tackle	The length of the bridles.
Strapping	Three fathoms in large, and two fathoms in small, ships.
EAR-RINGS	Two-sevenths of the length of their yard.
SHEETS and STRAPPING . . .	The length of their yard.
Seizing	One-sixth of the length of their yard.
Lashers	Six fathoms.
Stoppers	Four fathoms.
TACKS, single	Half the length of their yard.
TACKS, double	Once and three-fourths of the length of the single-tacks.
Stoppers	Four fathoms.
Laniards	Six fathoms in large, and five fathoms in small.
LANIARD for the Puden and Dolphin . . }	Ten fathoms in large, and six in small.
SLINGS	One-tenth of the length of their yard.
Strap	Half the length of the slings.
Seizing	Twice the length of the slings.
Laniard	Three-fourths of the length of the slings.
QUARTER-TACKLE PENDENTS . . . }	Ten fathoms in large, and seven fathoms in small.
Falls	Seven-eighths of the length of the yard.
Strapping	One-tenth of the length of the falls.
Seizing	Twice the length of the strapping.
LUFF-TACKLES	From thirty to twenty-five fathoms each tackle.
Strapping	Two fathoms to each tackle.
Seizing	Five fathoms to each tackle.
STAYSAIL-STAY	One-seventh of the length of its mast.
Collar	Two fathoms.
Seizing	Six fathoms.
Laniard	Four fathoms.
HALIARD	Two-fifths of the length of the main-mast.
SHEETS	The length of the stayfail-stay.
Strapping	One-third of the length of the sheets.
TACKS	One-third of the length of the sheets.
DOWNHAULER	Once and a half the length of the stayfail-stay.
Strapping	One fathom.

STUDDINGSAIL-

STUDDINGSAIL-HALLIARDS, Inner . . . }	Three-fifths of the length of the main-yard.
Ditto, Outer . . .	Two fathoms longer than the main-yard.
Sheets	Three-tenths of the length of the main-yard.
Tacks	Five-ninths of the length of the main-yard.
Strapping	One-fifth of the length of the main-yard.

LENGTH OF THE RIGGING BELONGING TO THE MAIN-TOPE

MAST AND TOPSAIL-YARD.

BURTON-PENDENTS . .	One-ninth of the length of the main-topmast.
Falls	The length of the main-topmast.
Strapping	Two-thirds of the length of the pendents.
SHROUDS, first warp . .	Seven-eighths of the length of the main-topmast, in feet.
Whole length . . .	Twice the length of the first warp for every pair.
SEIZINGS. {	Eye One-fourth of the whole length of the shrouds.
	Throat Once and three-fourths of the length of the eye-seizings.
	End Once and a half the length of the eye-seizings.
Laniards	Three-fifths of the whole length of the shrouds.
Ratlings	Once and three-eighths of the whole length of the shrouds.
STANDING-BACKSTAYS.	Twice the length of their topmast, in feet, for the first warp, and twice that for every pair.
SEIZING. {	Eye One-eighth of the whole length of the backstays.
	Throat Once and three-fourths of the length of the eye-seizing.
	End Once and a half the length of the eye-seizing.
Laniards	One-fifth of the length of the backstays.
BREAST-BACKSTAY } RUNNERS }	One-seventh of the length of the topmast, in fathoms.
Falls	One-third of the length of the topmast.
Strapping	One-sixth of the length of the falls.
STAY	Two-fifths of the lengths of its topmast.
Collar	One-sixth of the length of its stay.
Tackle	The length of its stay.
Strapping	One-sixth of the length of the tackle.
Seizings	One-third of the length of the stay.
Lashing	Seven fathoms in large, and six in small, ships.
PREVENTER-STAY . . .	The length of the topmast-stay.
Collar	One-sixth of the length of its stay.
Tackle	The length of its stay.
Strapping	One-eighth of the length of its tackle.
Seizing	Three times the length of the strapping.
Lashing the } Collar }	One-fourth of the length of the stay.

SHIFTING-

SHIFTING-BACKSTAYS.	Five-eighths of the length of their topmast.
Tackles	Ten fathoms for each tackle in small, and twelve fathoms in large, ships.
Strapping	One fathom and a half to each tackle in small, and two fathoms in large.
FUTTOCK-SHROUDS.	Three-eighths of the whole length of the topmast-shrouds.
Seizings. { Upper . .	Once and one-third of the length of the futtock-shrouds.
{ Lower . .	Seven-eighths of the length of the upper-seizing.
Ratling	Once and one-fourth of the length of their shrouds.
TOP-ROPE PENDENTS.	Two-thirds of the length of the topmast.
Falls	Three times and a half in large, and three times the length of the pendants in small, ships.
TYE	Three-fourths of the length of the topmast.
Strapping	One-fifth of the length of the tye.
Seizing	Once and a half the length of the strapping.
Lashers. { Mast-head.	One-fifth of the length of the topmast.
{ Yard . . .	Half the mast-head lashing.
HALIARDS	Twice the length of the topmast.
Strapping	One-eighth of the length of the topmast.
Seizing	Twice the strapping.
HORSES	One-fifth of the length of the yard main-topfail.
Stirrups	Three-fourths of the length of the horses.
BRACES	Once and one-fifth of the length of their yard.
Pendants	One-eighth of the length of the yard.
Preventer	One fathom longer.
Strapping	Three-eighths of the length of the pendants.
Span about the Mizzen-Mast	Six to four fathoms.
LIFTS	Once and one-tenth of the length of the yard.
Beckets	Two to three fathoms.
Strapping	Three times the length of the beckets.
Seizing	One-fourth of the length of the lifts.
PARRAL-ROPE	One-fifth of the length of the yard.
Racking and Seizing.	Once and one-third of the parral-rope.
CLUE-LINES	Once and three-sevenths of the length of the main-topfail yard.
Strapping	One-eighth of the length of the main-top yard.
BUNT-LINES and STRAPPING	Six fathoms more than the length of the yard.
LEECH-LINES and STRAPPING	Half the length of the yard.
BOWLINES & STRAPPING	The length of the yard in large ships, and three fathoms more than the length of the yard in small.
Bridles	One-fourth of the length of the yard.
Frapping & Lashing.	One-fifth of the length of the main-top yard.
Seizing	Six fathoms in large ships, and four in small.

REEF-

REEF-TACKLE PENDENTS }	Three-fourths of the length of the main-topfail yard.
Falls	Six fathoms more than the length of the yard in large ships, and two in small.
Strapping	Three fathoms in large ships, and one and a half in small.
EAR-RINGS	Two-thirds of the length of the main-topfail yard.
SHEETS	Seven-eighths of the length of the main-topfail yard.
STRAPS for Sheet-Blocks.	One-twelfth of the length of the sheets.
STRAPS for Quarter-Blocks	Twice in large ships, and once and a half the length of the straps for the sheet-blocks in small.
LASHERS for Quarter-Blocks }	Twice the strapping for sheet-blocks.
Seizings	Three-sevenths of the length of the sheets.
Span	The length of the lashers.
Stoppers	Half the length of the span.
SLINGS	One-fifth of the length of the main-topfail yard.
STAYSAIL HALIARD and STRAPPING }	Twice the length of the preventer-stay.
SHEETS	Once and one-third of the length of the haliard in large, and the same length as the haliard in small, ships.
Strapping	Two fathoms in large ships, and one and a half in small.
Pendants	Four fathoms.
TACK	Five in large ships, and three fathoms in small.
DOWNHAULER	Three-fifths of the length of the haliard.
Strapping	One fathom.
BRAILS	The length of the haliard.
MIDDLE STAYSAIL-STAY }	The length of the preventer-stay.
Tackle	Two fathoms less than the stay.
HALIARD	Two fathoms less than the topmast stayfail-haliards.
SHEETS	The length of the haliard.
TACK	Five fathoms in large, and four in small, ships.
DOWNHAULER	Two-thirds of the length of the haliard.
Strapping	Eight in large ships, and five fathoms in small.
TRICING-LINE	Three-fifths of the length of the downhauler.
STUDDINGSAIL-HALIARDS }	Once and a half the length of their topfail-yard.
Sheets	Half the length of the haliards.
Tacks	Two-thirds of the length of the haliards.
Downhaulers	Three-fifths of the length of the haliards.
Boom-Tackles	Four-fifths of the length of the haliards.
LASING for Booms	Twenty fathoms.
Tails	One-fifth of the length of the haliards.
Straps	One-third of the length of the tails.

LENGTH OF RIGGING BELONGING TO THE MAIN-TOPGALLANT MAST AND YARD.

SHROUDS, length of the } first warp }	Once and one-third of the length of the main-topmast, in feet.
Length of each } pair }	Twice the length of the first warp.
Laniards }	One-sixth of the length of the shrouds.
STANDING-BACK- } STAYS, length of the } first warp }	Twice and three-eighths of the length of the main-topmast, in feet.
Length of each } pair }	Twice the length of the first warp.
Laniards }	One-fourth of the length of the backstays.
STAY }	The length of its topmast-stay.
Strapping }	One fathom.
FLAGSTAFF-STAY }	Three fathoms longer than the topgallant-stay.
Haliards }	Once and one-eighth longer than the main-topmast.
TYE }	Three-tenths of the length of the main-topmast.
Haliard }	Twice the length of the tye.
Strapping }	One fathom and a half.
HORSERS }	One-fifth of the length of their yard.
BRACES }	Once and three-fourths of the length of their yard.
Pendants }	One-eighth of the length of the braces.
Strapping }	Three fathoms in large, and two in small.
LIFTS, single }	Once and three-tenths of the length of their yard.
Strapping }	One fathom and a half in large, and one in small, ships.
PARRAL-ROPES }	One-eighth of the length of their yard.
CLUE-LINES and } STRAPPING }	Once and three-fourths of the length of their yard.
BUNTLINES }	Half the length of the clue-lines.
BOWLINES & STRAP- } PING }	One fathom less than the clue-lines.
BRIDLES }	One-ninth of the length of the bowlines.
SHEETS }	The length of the topfail-yard.
EAR-RINGS }	Three-fourths of the length of their yard.

SHIFTING-BACKSTAY . . .	Half the standing-backstay.
Tackles	Twenty fathoms in large ships, and fourteen fathoms in small ships.
Strapping	One fathom and a half.
STAYSAIL-STAY	Ten fathoms more than the topgallant-stay.
HALIARDS	Ten fathoms more than their stay.
SHEETS	The length of the haliards.
Tack	Seven fathoms in large, and six in small, ships.
DOWNHAULER	Three fathoms less than the staysail-stay.
Strapping	Three fathoms in large, and two in small, ships.
STUDDINGSAIL-HALIARDS	Once and a quarter the length of the main-topmast.
Sheets	Half the length of the haliards.
Tacks	Ten fathoms more than the sheets.
Downhauler	The length of the sheets.
Strapping	Eight fathoms.

LENGTH OF THE RIGGING BELONGING TO THE MIZEN MAST AND YARD OR GAFF.

WOOLTINGS	Once and three-fifths of the length of the mizen-mast in ships of the line, and the same length for others.
GIRT-LINES and STRAPPING	Three-fourths of the length of their mast.
Seizings	Six fathoms in large, and five in small, ships.
Lashings	Eight fathoms in large, and seven in small, ships.
BURTON-PENDENTS	Eight fathoms in large, and six in small, ships.
Falls	Three-fourths of the length of the mizen-mast.
Strapping	Four fathoms in large, and three in small.
SHROUDS	Once and one-fifth of the length of their mast if six pair, and once and one-eighth if five pair.
Length of the first warp	The same rule as for the main-mast.
Seizings	Eye One-fourth of the length of the shrouds.
Throat	Twice the length of the eye-seizing.
End	Once and three-fourths of the length of the eye-seizing.
Laniards	Five-eighths of the length of the mizen-shrouds.
Ratling	Once and two-thirds of the length of the shrouds.

STAY	One-sixth of the length of the mizen-mast.
Seizings	Half the length of the stay.
Laniard	Six fathoms in large, and five fathoms in small, ships.
Collar	Three and a half in large, and two fathoms and a half in small, ships.
Seizing	Three fathoms.
Lashing	Three fathoms.
JEERS	Five-ninths of the length of the mizen-mast if treble and double, and half if double and single.
Strapping	Eight fathoms in large, and five in small, ships.
Seizing	Ten fathoms in large, and eight in small, ships.
Lashing	One-eighth of the length of the mizen-mast.
Mast-head.	
Yard	Half the mast-lashing.
DERRICK	Three-sevenths of the length of the mizen-mast.
Span	Four fathoms in large, and three in small, ships.
Strapping	Two and a half fathoms in large, and two in small, ships.
Seizing	One-eighth of the length of the mizen-mast.
Lashing	Eight fathoms in large, and seven in small, ships.
VANG-PENDENTS	One-seventh of the length of the mizen-mast.
Falls	Three-sevenths of the length of the mizen-mast.
Strapping	One fathom.
BOWLINES	One-fourth of the length of the mizen-yard.
Strapping	Three fathoms in large, and two in small, ships.
BRAILS PEAK-LEGS	Twelve fathoms in large, and ten in small, ships.
Falls	Eighteen fathoms in large, and sixteen in small.
Middle	One-fourth of the length of the mizen-mast.
Throat	Three-tenths of the length of the mizen-mast.
Foot	One-fifth of the length of the mizen-mast.
Strapping,	
Throat	One fathom.
Strapping,	
Foot and	
Middle	Nine fathoms in large, and seven in small, ships.
LACING to	
Mast	One-fourth of the length of the mizen-mast.
Yard	Seven fathoms more than the mast-lashing.
EAR-RINGS	Ten fathoms in large, and eight in small, ships.
PEAK-HALIARDS	One-fourth of the length of the mizen-mast.
SHEET	One-third of the length of the mizen-mast.
Strapping	Three fathoms and a half in large, and two fathoms in small, ships.
Seizing	Twice the quantity of strapping.
TACK	Five fathoms in large, and three in small.
SLINGS	Six fathoms in large, and four in small.

STAYSAIL-STAY	One-sixth of the length of the mizen-mast.
Collar	Three fathoms and a half in large, and two in small.
Seizing	The same as the collar.
Lashing	The same as the collar.
Laniard	Twice the length of the collar.
Haliards	Twice the length of the stayfail-stay.
Sheets	The length of the stayfail-stay.
Tacks	Four fathoms in large, and two in small.
Downhauler	The length of the stayfail-stay.
Strapping Sheets and Haliard. }	Three fathoms in large, and two fathoms in small.
Strapping Down- hauler }	Two fathoms in large, and one fathom in small.
Brails	Two fathoms less than the haliards.

LENGTH OF THE RIGGING BELONGING TO THE DRIVER.

TOPPING-LIFTS	Four-sevenths the length of the driver-boom, taking fathoms for length.
Span	Six fathoms in large ships, and four fathoms in small.
Falls	Forty-six fathoms from 110 to 64 guns, forty fathoms from 50 to 36 guns, thirty-six fathoms from 32 to 28 guns, thirty fathoms from 24 to 20 guns, and twenty-four fathoms in all under.
GUY-PENDENTS	Twelve fathoms from 110 to 36 guns, and ten fathoms in all under.
Falls	Sixty fathoms from 110 to 28 guns, and fifty fathoms in all under.
BOOM-SHEET	Twenty-five fathoms from 110 to 28 guns, and twenty-four fathoms in all under.
Horfes	Fourteen fathoms from 110 to 64 guns, twelve fathoms from 50 to 28 guns, and ten fathoms in all under.
SHEET-PENDENT	Fourteen fathoms from 110 to 44 guns, twelve fathoms from 38 to 36 guns, and ten fathoms in all under.
Falls	Twenty fathoms from 110 to 28 guns, and eighteen fathoms in all under.
Brails	One hundred and eight fathoms from 110 to 28 guns, and ninety-six fathoms in all under.
LACING to Yard	Thirty fathoms from 110 to 28 guns, and twenty-four fathoms in all under.
TACK-TACKLE	Twelve fathoms from 110 to 36 guns, and ten fathoms in all under.

LENGTH

LENGTH OF THE RIGGING BELONGING TO THE CROSS-JACK-YARD.

TRUSS-PENDENT	Six fathoms.
Falls	One-third of the length of the cross-jack-yard.
Strapping	Three fathoms in large, and two in small, ships.
Seizing	Eight in large, and six in small, ships.
Span about the Cap.	Two fathoms.
BRACES	Two fathoms longer than their yard.
BRACE-PENDENTS . . .	Six fathoms in large, and five in small, ships.
Preventer	One fathom longer than the brace-pendents.
Strapping	Two fathoms.
LIFTS, running	Six-sevenths of the length of their yard.
Strapping	Three fathoms in large, and two in small, ships.
SLINGS	One-tenth of the length of their yard.
Strapping	Two fathoms in large, and one and a half in small, ships.
Seizing	Once and a half the strapping.
Lashing	Five fathoms in large, and four in small.

LENGTH OF THE RIGGING BELONGING TO THE MIZEN- TOPMAST.

SHROUDS, first warp . .	Seven-eighths of the length of their topmast, in feet.
Whole length . . .	Once and one-sixth of the length of their topmast, in fathoms, if four pair, and once the length if three pair.
Seizings	Once and a half the length of the shrouds.
Laniards	Two-thirds of the length of the shrouds.
Ratling	Once and a quarter the length of the shrouds.
STANDING-BACKSTAYS.	Twice the length of their topmast, in feet, for the first warp, and double that for every pair.
Seizings	Half the length of the backstays.
Laniards	Sixteen fathoms if two pair, and eight for one pair.
STAY	Three-tenths of the length of its topmast.
Laniard	Half the length of the stay.
Collar	One-fourth of the length of the stay.
Seizing and Lashing.	Six fathoms.
FLAGSTAY-STAY . . .	The length of the topmast-stay.
Haliards	Half the length of the topmast.

SHIFTING-

SHIFTING-BACKSTAY .	One fathom longer than the topmast-stay.
Tackle	Twelve fathoms in large, and ten fathoms in small.
Strapping	Four fathoms in large, and three fathoms in small.
FUTTOCK-SHROUDS . . .	Three-tenths of the length of the topmast-shrouds.
Seizing	Twice the length of the topmast-shrouds.
Ratling	One fathom longer than their shrouds.
TOP-ROPE PENDENTS.	Three-eighths of the length of their topmast.
Falls	Nine-tenths of the length of their topmast.
TYE	One-third of the length of the topmast.
Haliard	The length of the topmast.
Strapping	Four fathoms in large, and two in small, ships.
Lashing	Three fathoms.
HORSES	One-fifth of the length of their yard.
Stirrups	Half the length of the horses.
BRACES and STRAPPING.	Nine fathoms longer than their yard.
Pendants	Four fathoms in large, and three in small.
LIFTS	Ten fathoms longer than their yard.
Strapping	Three fathoms in large, and two in small.
PARRAL-ROPES	One-eighth of the length of their yard.
CLUE-LINES	Once and a half the length of their yard.
Strapping	Four fathoms in large, and three in small.
BUNTLINES and	} Two fathoms longer than the topmast.
STRAPPING	
LEECH-LINES and	} Three-sevenths of the length of the yard.
STRAPPING	
BOWLINES and	} The length of the topmast.
STRAPPING	
Bridles	One-fifth of the length of the bowlines.
REEF-TACKLE PEN-	} Three-fourths of the length of their yard.
DENTS	
Falls	
Strapping	One fathom.
EAR-RINGS	Seven-tenths of the length of the yard.
SHEETS	Seven-eighths of the length of the yard.
Strapping	Two fathoms for shoulder-block, and three fathoms in large, and two in small, for the other block.
Seizing	Fourteen fathoms in large, and twelve in small.
Lashing	Five fathoms in large, and four in small.
STAYSAIL-HALIARD . .	Three-fifths of the length of the mizen-topmast.
Sheets	Two fathoms more than the haliard.
Tacks	Two fathoms.
Downhauler . . .	Seven-tenths of the length of the haliards.
Strapping	Two fathoms in large, and one in small.

MIZEN-TOPGALLANT MAST AND YARD RIGGING.

SHROUDS, first warp . . .	Once and one-third of the length of the mizen-topmast, in feet.
Whole length . .	Once and three-fourths of the length of their topgallant-mast, in fathoms.
Laniards	One-third of the length of their shrouds.
BACKSTAYS	Once and three-fourths of the length of their topgallant-mast.
Laniards	Six fathoms.
STAY	Four-sevenths of the length of its topgallant-mast.
Laniard	Four fathoms in large, and three in small.
FLAFF-HALIARD	Once the length of the mizen-topmast.
TYE	Two-sevenths of the length of its topgallant-mast.
Haliard	Once and two-sevenths the length of the topgallant-mast.
HORSES	One-fifth of the length of their yard.
BRACES	Twice the length of the topgallant-mast.
LIFTS, single	The length of their yard.
PARRAL-ROPES	One-seventh of the length of the topgallant-yard.
CLUE-LINES	Five fathoms more than the length of the braces.
BOWLINES	Two fathoms less than the clue-lines.
Bridles	Three fathoms in large, and two in small, ships.
SHEETS	The length of their yard.
EAR-RINGS	Three-fourths the length of their yard.
Strapping	Three fathoms in large, and two in small.

LENGTH



LENGTH
OF THE
NECESSARY ROPES
FOR A
SHIP OF EACH CLASS.

LENGT H

[illegible]

	10	10	10	16	16	9	16	14	14	12
Seizing.....	10	10	10	16	16	9	16	14	14	14
Laniard	16	16	16	16	14	15	14	14	13	10

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[illegible]

LENGTH OF THE NECESSARY ROPES FOR A SHIP OF EACH CLASS.

NAMES.	Guns. 110 to 100	Guns. 98 to 90	Guns. 80	74 Guns.	64 Guns.	50 to 44 Guns.	38 Guns.	36 Guns.	32 Guns.	28 Guns.	24 Guns.	22 to 20 Guns.	16 to 20 Guns.
Ropes Davit, worn	12	12	12	12	12	10	8	8	8	8	7½	7	6½
Bell	4	4	3	3	3	2	2	2	2	2	2	2	1½
Coil of Lashing, ...	No. 1					Fa. 80							
Bucket	36	36	36	30	28	24	20	70	65	60	57	54	50
Swab, worn	30	30	30	30	30	20	18	20	19	18	17½	17	16
Entering	60	60	60	60	58	50	50	50	18	18	17½	17	12
Puffing	12	12	12	12	12	11	11	11	—	—	—	—	—
Laniard	40	40	40	40	40	30	30	30	—	—	—	—	—
Slip	150	150	150	150	144	130	100	100	98	96	93	90	80
Quarter, Poop, and Waist	I	I	I	I	I	I	I	I	I	I	I	I	I
Fore, Main, and Mizzen, Tops	30	30	30	30	28	24	23	23	23	23	22½	22	20
Wheel or Tiller, white	1½	1½	1½	1½	1½	1½	1½	1½	1½	1½	1½	1½	1½
Strapping	6	6	6	6	6	6	—	—	—	—	—	—	—
Seizing	130	130	130	130	128	100	100	100	100	90	80	70	60
Puddening of Anchors, worn }	40	40	40	40	40	30	30	30	30	26	25	25	20
Seizings	96	96	96	96	96	80	70	70	70	70	60	50	46
Slings Buoy, 4 pair	56	56	56	56	52	48	48	48	48	48	46	44	40
Laniards	15	15	15	15	15	12	12	12	12	10	9	9	6
Seizings	42	42	42	42	42	No. 2	Ta 2 med 2 Li bes 2	6½	6½	6	6	6	4½
Gun	7	7	7	7	7	6½	6½	6½	6½	3½	3½	3½	4
Nut	4	4	4	4	4	4	3½	3½	3½	3½	3½	3½	3
Butt	20	20	20	20	20	20	20	20	20	15	15	15	10
Hoghead	16	16	16	16	16	16	16	16	16	12	12	12	12
Can-hook	6	6	6	6	6	6	6	6	9	6	6	6	6

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FO

RIGGING FOR LONG-BOATS.

Topping-Lift	15	16	5	1	1½	22	10	10	7	40	4	40	50	7	12	14	12	2½	20	20	70	10	10	20	20	20	4	
Fore Haliard	16	5	1	1½	22	10	10	7	40	4	40	50	7	12	14	12	2½	20	20	70	10	10	20	20	20	4		
Sheet	5	1	1½	22	10	10	7	40	4	40	50	7	12	14	12	2½	20	20	70	10	10	20	20	20	4			
Tack	1	1½	22	10	10	7	40	4	40	50	7	12	14	12	2½	20	20	70	10	10	20	20	20	4				
Bowline	1½	22	10	10	7	40	4	40	50	7	12	14	12	2½	20	20	70	10	10	20	20	20	4					
Jib Haliards	22	10	10	7	40	4	40	50	7	12	14	12	2½	20	20	70	10	10	20	20	20	4						
Sheet	10	10	7	40	4	40	50	7	12	14	12	2½	20	20	70	10	10	20	20	20	4							
Outhaul	10	10	7	40	4	40	50	7	12	14	12	2½	20	20	70	10	10	20	20	20	4							
Inbauler	7	40	4	40	50	7	12	14	12	2½	20	20	70	10	10	20	20	20	4									
Boat-Rope, cabled	40	4	40	50	7	12	14	12	2½	20	20	70	10	10	20	20	20	4										
Laniard	4	40	50	7	12	14	12	2½	20	20	70	10	10	20	20	20	4											
Guest-Rope, cabled	40	50	7	12	14	12	2½	20	20	70	10	10	20	20	20	4												
Grappel-Rope, cabled	50	7	12	14	12	2½	20	20	70	10	10	20	20	20	4													
Painter	7	12	14	12	2½	20	20	70	10	10	20	20	20	4														
Sternfast	12	14	12	2½	20	20	70	10	10	20	20	20	4															
Fenders, cabled, worn	14	12	2½	20	20	70	10	10	20	20	20	4																
Laniards	12	2½	20	20	70	10	10	20	20	20	4																	
Rudder-Laniards	2½	20	20	70	10	10	20	20	20	4																		
PINNACE.																												
Haliards, Main and Fore	20	20	70	10	10	20	20	20	4																			
Sheets	20	70	10	10	20	20	20	4																				
Grappel-Rope, cabled	70	10	10	20	20	20	4																					
Painter	10	20	20	20	4																							
Sternfast	20	20	20	4																								
Slings	10	20	20	4																								
Seizings	20	20	20	4																								
Rudder-Laniards	4																											

NAMES:

NAMES.		FATHOMS IN LENGTH.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
		10 to 12 Guns.	12 to 14 Guns.	14 to 16 Guns.	16 to 18 Guns.	18 to 20 Guns.	20 to 22 Guns.	22 to 24 Guns.	24 to 26 Guns.	26 to 28 Guns.	28 to 30 Guns.	30 to 32 Guns.	32 to 34 Guns.	34 to 36 Guns.	36 to 38 Guns.	38 to 40 Guns.	40 to 42 Guns.	42 to 44 Guns.	44 to 46 Guns.	46 to 48 Guns.	48 to 50 Guns.	50 to 52 Guns.	52 to 54 Guns.	54 to 56 Guns.	56 to 58 Guns.	58 to 60 Guns.	60 to 62 Guns.	62 to 64 Guns.	64 to 66 Guns.	66 to 68 Guns.	68 to 70 Guns.	70 to 72 Guns.	72 to 74 Guns.	74 to 76 Guns.	76 to 78 Guns.	78 to 80 Guns.	80 to 82 Guns.	82 to 84 Guns.	84 to 86 Guns.	86 to 88 Guns.	88 to 90 Guns.	90 to 92 Guns.	92 to 94 Guns.	94 to 96 Guns.	96 to 98 Guns.	98 to 100 Guns.	100 to 102 Guns.	102 to 104 Guns.	104 to 106 Guns.	106 to 108 Guns.	108 to 110 Guns.	110 to 112 Guns.	112 to 114 Guns.	114 to 116 Guns.	116 to 118 Guns.	118 to 120 Guns.	120 to 122 Guns.	122 to 124 Guns.	124 to 126 Guns.	126 to 128 Guns.	128 to 130 Guns.	130 to 132 Guns.	132 to 134 Guns.	134 to 136 Guns.	136 to 138 Guns.	138 to 140 Guns.	140 to 142 Guns.	142 to 144 Guns.	144 to 146 Guns.	146 to 148 Guns.	148 to 150 Guns.	150 to 152 Guns.	152 to 154 Guns.	154 to 156 Guns.	156 to 158 Guns.	158 to 160 Guns.	160 to 162 Guns.	162 to 164 Guns.	164 to 166 Guns.	166 to 168 Guns.	168 to 170 Guns.	170 to 172 Guns.	172 to 174 Guns.	174 to 176 Guns.	176 to 178 Guns.	178 to 180 Guns.	180 to 182 Guns.	182 to 184 Guns.	184 to 186 Guns.	186 to 188 Guns.	188 to 190 Guns.	190 to 192 Guns.	192 to 194 Guns.	194 to 196 Guns.	196 to 198 Guns.	198 to 200 Guns.	200 to 202 Guns.	202 to 204 Guns.	204 to 206 Guns.	206 to 208 Guns.	208 to 210 Guns.	210 to 212 Guns.	212 to 214 Guns.	214 to 216 Guns.	216 to 218 Guns.	218 to 220 Guns.	220 to 222 Guns.	222 to 224 Guns.	224 to 226 Guns.	226 to 228 Guns.	228 to 230 Guns.	230 to 232 Guns.	232 to 234 Guns.	234 to 236 Guns.	236 to 238 Guns.	238 to 240 Guns.	240 to 242 Guns.	242 to 244 Guns.	244 to 246 Guns.	246 to 248 Guns.	248 to 250 Guns.	250 to 252 Guns.	252 to 254 Guns.	254 to 256 Guns.	256 to 258 Guns.	258 to 260 Guns.	260 to 262 Guns.	262 to 264 Guns.	264 to 266 Guns.	266 to 268 Guns.	268 to 270 Guns.	270 to 272 Guns.	272 to 274 Guns.	274 to 276 Guns.	276 to 278 Guns.	278 to 280 Guns.	280 to 282 Guns.	282 to 284 Guns.	284 to 286 Guns.	286 to 288 Guns.	288 to 290 Guns.	290 to 292 Guns.	292 to 294 Guns.	294 to 296 Guns.	296 to 298 Guns.	298 to 300 Guns.	300 to 302 Guns.	302 to 304 Guns.	304 to 306 Guns.	306 to 308 Guns.	308 to 310 Guns.	310 to 312 Guns.	312 to 314 Guns.	314 to 316 Guns.	316 to 318 Guns.	318 to 320 Guns.	320 to 322 Guns.	322 to 324 Guns.	324 to 326 Guns.	326 to 328 Guns.	328 to 330 Guns.	330 to 332 Guns.	332 to 334 Guns.	334 to 336 Guns.	336 to 338 Guns.	338 to 340 Guns.	340 to 342 Guns.	342 to 344 Guns.	344 to 346 Guns.	346 to 348 Guns.	348 to 350 Guns.	350 to 352 Guns.	352 to 354 Guns.	354 to 356 Guns.	356 to 358 Guns.	358 to 360 Guns.	360 to 362 Guns.	362 to 364 Guns.	364 to 366 Guns.	366 to 368 Guns.	368 to 370 Guns.	370 to 372 Guns.	372 to 374 Guns.	374 to 376 Guns.	376 to 378 Guns.	378 to 380 Guns.	380 to 382 Guns.	382 to 384 Guns.	384 to 386 Guns.	386 to 388 Guns.	388 to 390 Guns.	390 to 392 Guns.	392 to 394 Guns.	394 to 396 Guns.	396 to 398 Guns.	398 to 400 Guns.	400 to 402 Guns.	402 to 404 Guns.	404 to 406 Guns.	406 to 408 Guns.	408 to 410 Guns.	410 to 412 Guns.	412 to 414 Guns.	414 to 416 Guns.	416 to 418 Guns.	418 to 420 Guns.	420 to 422 Guns.	422 to 424 Guns.	424 to 426 Guns.	426 to 428 Guns.	428 to 430 Guns.	430 to 432 Guns.	432 to 434 Guns.	434 to 436 Guns.	436 to 438 Guns.	438 to 440 Guns.	440 to 442 Guns.	442 to 444 Guns.	444 to 446 Guns.	446 to 448 Guns.	448 to 450 Guns.	450 to 452 Guns.	452 to 454 Guns.	454 to 456 Guns.	456 to 458 Guns.	458 to 460 Guns.	460 to 462 Guns.	462 to 464 Guns.	464 to 466 Guns.	466 to 468 Guns.	468 to 470 Guns.	470 to 472 Guns.	472 to 474 Guns.	474 to 476 Guns.	476 to 478 Guns.	478 to 480 Guns.	480 to 482 Guns.	482 to 484 Guns.	484 to 486 Guns.	486 to 488 Guns.	488 to 490 Guns.	490 to 492 Guns.	492 to 494 Guns.	494 to 496 Guns.	496 to 498 Guns.	498 to 500 Guns.	500 to 502 Guns.	502 to 504 Guns.	504 to 506 Guns.	506 to 508 Guns.	508 to 510 Guns.	510 to 512 Guns.	512 to 514 Guns.	514 to 516 Guns.	516 to 518 Guns.	518 to 520 Guns.	520 to 522 Guns.	522 to 524 Guns.	524 to 526 Guns.	526 to 528 Guns.	528 to 530 Guns.	530 to 532 Guns.	532 to 534 Guns.	534 to 536 Guns.	536 to 538 Guns.	538 to 540 Guns.	540 to 542 Guns.	542 to 544 Guns.	544 to 546 Guns.	546 to 548 Guns.	548 to 550 Guns.	550 to 552 Guns.	552 to 554 Guns.	554 to 556 Guns.	556 to 558 Guns.	558 to 560 Guns.	560 to 562 Guns.	562 to 564 Guns.	564 to 566 Guns.	566 to 568 Guns.	568 to 570 Guns.	570 to 572 Guns.	572 to 574 Guns.	574 to 576 Guns.	576 to 578 Guns.	578 to 580 Guns.	580 to 582 Guns.	582 to 584 Guns.	584 to 586 Guns.	586 to 588 Guns.	588 to 590 Guns.	590 to 592 Guns.	592 to 594 Guns.	594 to 596 Guns.	596 to 598 Guns.	598 to 600 Guns.	600 to 602 Guns.	602 to 604 Guns.	604 to 606 Guns.	606 to 608 Guns.	608 to 610 Guns.	610 to 612 Guns.	612 to 614 Guns.	614 to 616 Guns.	616 to 618 Guns.	618 to 620 Guns.	620 to 622 Guns.	622 to 624 Guns.	624 to 626 Guns.	626 to 628 Guns.	628 to 630 Guns.	630 to 632 Guns.	632 to 634 Guns.	634 to 636 Guns.	636 to 638 Guns.	638 to 640 Guns.	640 to 642 Guns.	642 to 644 Guns.	644 to 646 Guns.	646 to 648 Guns.	648 to 650 Guns.	650 to 652 Guns.	652 to 654 Guns.	654 to 656 Guns.	656 to 658 Guns.	658 to 660 Guns.	660 to 662 Guns.	662 to 664 Guns.	664 to 666 Guns.	666 to 668 Guns.	668 to 670 Guns.	670 to 672 Guns.	672 to 674 Guns.	674 to 676 Guns.	676 to 678 Guns.	678 to 680 Guns.	680 to 682 Guns.	682 to 684 Guns.	684 to 686 Guns.	686 to 688 Guns.	688 to 690 Guns.	690 to 692 Guns.	692 to 694 Guns.	694 to 696 Guns.	696 to 698 Guns.	698 to 700 Guns.	700 to 702 Guns.	702 to 704 Guns.	704 to 706 Guns.	706 to 708 Guns.	708 to 710 Guns.	710 to 712 Guns.	712 to 714 Guns.	714 to 716 Guns.	716 to 718 Guns.	718 to 720 Guns.	720 to 722 Guns.	722 to 724 Guns.	724 to 726 Guns.	726 to 728 Guns.	728 to 730 Guns.	730 to 732 Guns.	732 to 734 Guns.	734 to 736 Guns.	736 to 738 Guns.	738 to 740 Guns.	740 to 742 Guns.	742 to 744 Guns.	744 to 746 Guns.	746 to 748 Guns.	748 to 750 Guns.	750 to 752 Guns.	752 to 754 Guns.	754 to 756 Guns.	756 to 758 Guns.	758 to 760 Guns.	760 to 762 Guns.	762 to 764 Guns.	764 to 766 Guns.	766 to 768 Guns.	768 to 770 Guns.	770 to 772 Guns.	772 to 774 Guns.	774 to 776 Guns.	776 to 778 Guns.	778 to 780 Guns.	780 to 782 Guns.	782 to 784 Guns.	784 to 786 Guns.	786 to 788 Guns.	788 to 790 Guns.	790 to 792 Guns.	792 to 794 Guns.	794 to 796 Guns.	796 to 798 Guns.	798 to 800 Guns.	800 to 802 Guns.	802 to 804 Guns.	804 to 806 Guns.	806 to 808 Guns.	808 to 810 Guns.	810 to 812 Guns.	812 to 814 Guns.	814 to 816 Guns.	816 to 818 Guns.	818 to 820 Guns.	820 to 822 Guns.	822 to 824 Guns.	824 to 826 Guns.	826 to 828 Guns.	828 to 830 Guns.	830 to 832 Guns.	832 to 834 Guns.	834 to 836 Guns.	836 to 838 Guns.	838 to 840 Guns.	840 to 842 Guns.	842 to 844 Guns.	844 to 846 Guns.	846 to 848 Guns.	848 to 850 Guns.	850 to 852 Guns.	852 to 854 Guns.	854 to 856 Guns.	856 to 858 Guns.	858 to 860 Guns.	860 to 862 Guns.	862 to 864 Guns.	864 to 866 Guns.	866 to 868 Guns.	868 to 870 Guns.	870 to 872 Guns.	872 to 874 Guns.	874 to 876 Guns.	876 to 878 Guns.	878 to 880 Guns.	880 to 882 Guns.	882 to 884 Guns.	884 to 886 Guns.	886 to 888 Guns.	888 to 890 Guns.	890 to 892 Guns.	892 to 894 Guns.	894 to 896 Guns.	896 to 898 Guns.	898 to 900 Guns.	900 to 902 Guns.	902 to 904 Guns.	904 to 906 Guns.	906 to 908 Guns.	908 to 910 Guns.	910 to 912 Guns.	912 to 914 Guns.	914 to 916 Guns.	916 to 918 Guns.	918 to 920 Guns.	920 to 922 Guns.	922 to 924 Guns.	924 to 926 Guns.	926 to 928 Guns.	928 to 930 Guns.	930 to 932 Guns.	932 to 934 Guns.	934 to 936 Guns.	936 to 938 Guns.	938 to 940 Guns.	940 to 942 Guns.	942 to 944 Guns.	944 to 946 Guns.	946 to 948 Guns.	948 to 950 Guns.	950 to 952 Guns.	952 to 954 Guns.	954 to 956 Guns.	956 to 958 Guns.	958 to 960 Guns.	960 to 962 Guns.	962 to 964 Guns.	964 to 966 Guns.	966 to 968 Guns.	968 to 970 Guns.	970 to 972 Guns.	972 to 974 Guns.	974 to 976 Guns.	976 to 978 Guns.	978 to 980 Guns.	980 to 982 Guns.	982 to 984 Guns.	984 to 986 Guns.	986 to 988 Guns.	988 to 990 Guns.	990 to 992 Guns.	992 to 994 Guns.	994 to 996 Guns.	996 to 998 Guns.	998 to 1000 Guns.
		10 to 12 Guns.	12 to 14 Guns.	14 to 16 Guns.	16 to 18 Guns.	18 to 20 Guns.	20 to 22 Guns.	22 to 24 Guns.	24 to 26 Guns.	26 to 28 Guns.	28 to 30 Guns.	30 to 32 Guns.	32 to 34 Guns.	34 to 36 Guns.	36 to 38 Guns.	38 to 40 Guns.	40 to 42 Guns.	42 to 44 Guns.	44 to 46 Guns.	46 to 48 Guns.	48 to 50 Guns.	50 to 52 Guns.	52 to 54 Guns.	54 to 56 Guns.	56 to 58 Guns.	58 to 60 Guns.	60 to 62 Guns.	62 to 64 Guns.	64 to 66 Guns.	66 to 68 Guns.	68 to 70 Guns.	70 to 72 Guns.	72 to 74 Guns.	74 to 76 Guns.	76 to 78 Guns.	78 to 80 Guns.	80 to 82 Guns.	82 to 84 Guns.	84 to 86 Guns.	86 to 88 Guns.	88 to 90 Guns.	90 to 92 Guns.	92 to 94 Guns.	94 to 96 Guns.	96 to 98 Guns.	98 to 100 Guns.	100 to 102 Guns.	102 to 104 Guns.	104 to 106 Guns.	106 to 108 Guns.	108 to 110 Guns.	110 to 112 Guns.	112 to 114 Guns.	114 to 116 Guns.	116 to 118 Guns.	118 to 120 Guns.	120 to 122 Guns.	122 to 124 Guns.	124 to 126 Guns.	126 to 128 Guns.	128 to 130 Guns.	130 to 132 Guns.	132 to 134 Guns.	134 to 136 Guns.	136 to 138 Guns.	138 to 140 Guns.	140 to 142 Guns.	142 to 144 Guns.	144 to 146 Guns.	146 to 148 Guns.	148 to 150 Guns.	150 to 152 Guns.	152 to 154 Guns.	154 to 156 Guns.	156 to 158 Guns.	158 to 160 Guns.	160 to 162 Guns.	162 to 164 Guns.	164 to 166 Guns.	166 to 168 Guns.	168 to 170 Guns.	170 to 172 Guns.	172 to 174 Guns.	174 to 176 Guns.	176 to 178 Guns.	178 to 180 Guns.	180 to 182 Guns.	182 to 184 Guns.	184 to 186 Guns.	186 to 188 Guns.	188 to 190 Guns.	190 to 192 Guns.	192 to 194 Guns.	194 to 196 Guns.	196 to 198 Guns.	198 to 200 Guns.	200 to 202 Guns.	202 to 204 Guns.	204 to 206 Guns.	206 to 208 Guns.	208 to 210 Guns.	210 to 212 Guns.	212 to 214 Guns.	214 to 216 Guns.	216 to 218 Guns.	218 to 220 Guns.	220 to 222 Guns.	222 to 224 Guns.	224 to 226 Guns.	226 to 228 Guns.	228 to 230 Guns.	230 to 232 Guns.	232 to 234 Guns.	234 to 236 Guns.	236 to 238 Guns.	238 to 240 Guns.	240 to 242 Guns.	242 to 244 Guns.	244 to 246 Guns.	246 to 248 Guns.	248 to 250 Guns.	250 to 252 Guns.	252 to 254 Guns.	254 to 256 Guns.	256 to 258 Guns.	258 to 260 Guns.	260 to 262 Guns.	262 to 264 Guns.	264 to 266 Guns.	266 to 268 Guns.	268 to 270 Guns.	270 to 272 Guns.	272 to 274 Guns.	274 to 276 Guns.	276 to 278 Guns.	278 to 280 Guns.	280 to 282 Guns.	282 to 284 Guns.	284 to 286 Guns.	286 to 288 Guns.	288 to 290 Guns.	290 to 292 Guns.	292 to 294 Guns.	294 to 296 Guns.	296 to 298 Guns.	298 to 300 Guns.	300 to 302 Guns.	302 to 304 Guns.	304 to 306 Guns.	306 to 308 Guns.	308 to 310 Guns.	310 to 312 Guns.	312 to 314 Guns.	314 to 316 Guns.	316 to 318 Guns.	318 to 320 Guns.	320 to 322 Guns.	322 to 324 Guns.	324 to 326 Guns.	326 to 328 Guns.	328 to 330 Guns.	330 to 332 Guns.	332 to 334 Guns.	334 to 336 Guns.	336 to 338 Guns.	338 to 340 Guns.	340 to 342 Guns.	342 to 344 Guns.	344 to 346 Guns.	346 to 348 Guns.	348 to 350 Guns.	350 to 352 Guns.	352 to 354 Guns.	354 to 356 Guns.	356 to 358 Guns.	358 to 360 Guns.	360 to 362 Guns.	362 to 364 Guns.	364 to 366 Guns.	366 to 368 Guns.	368 to 370 Guns.	370 to 372 Guns.	372 to 374 Guns.	374 to 376 Guns.	376 to 378 Guns.	378 to 380 Guns.	380 to 382 Guns.	382 to 384 Guns.	384 to 386 Guns.	386 to 388 Guns.	388 to 390 Guns.	390 to 392 Guns.	392 to 394 Guns.	394 to 396 Guns.	396 to 398 Guns.	398 to 400 Guns.	400 to 402 Guns.	402 to 404 Guns.	404 to 406 Guns.	406 to 408 Guns.	408 to 410 Guns.	410 to 412 Guns.	412 to 414 Guns.	414 to 416 Guns.	416 to 418 Guns.	418 to 420 Guns.	420 to 422 Guns.	422 to 424 Guns.	424 to 426 Guns.	426 to 428 Guns.	428 to 430 Guns.	430 to 432 Guns.	432 to 434 Guns.	434 to 436 Guns.	436 to 438 Guns.	438 to 440 Guns.	440 to 442 Guns.	442 to 444 Guns.	444 to 446 Guns.	446 to 448 Guns.	448 to 450 Guns.	450 to 452 Guns.	452 to 454 Guns.	454 to 456 Guns.	456 to 458 Guns.	458 to 460 Guns.	460 to 462 Guns.	462 to 464 Guns.	464 to 466 Guns.	466 to 468 Guns.	468 to 470 Guns.	470 to 472 Guns.	472 to 474 Guns.	474 to 476 Guns.	476 to 478 Guns.	478 to 480 Guns.	480 to 482 Guns.	482 to 484 Guns.	484 to 486 Guns.	486 to 488 Guns.	488 to 490 Guns.	490 to 492 Guns.																																																																																																																																																																																																																																																														

EXP

Br. fl.
D.
D. c.
D. th.
D. E.
Eu.
Fl. fl.
H.
I. bd.
I. Tr.
L. t.
Par.
Pl. d.
Q.
S.
S. c.
S. h.

A T A B L E
OF THE
D I M E N S I O N S
OF THE
STANDING AND RUNNING RIGGING:
WITH THE
SPECIES, SIZE, AND NUMBER,
OF
BLOCKS, HEARTS, DEAD-EYES, &c.

EXPLANATION OF THE ABBREVIATIONS IN THE FOLLOWING
TABLES.

Br. sh.	Brafs sheaves.	S. do. fc.	Single block, double scored.
D.	Double block.	S. ft. bd.	Single strap-bound block.
D. c.	Double block, coaked.	S. th. c.	Single thin block, coaked.
D. th. c.	Double thin block, coaked.	S. br. sh.	Single block with brafs sheave.
D. E.	Dead-Eyes.	Sho.	Shouldered block.
Eu.	Euphroe.	Sif.	Sifter-block.
Fl. sh.	Flat-sided block.	Sn.	Snatch-block.
H.	Hearts.	St. bd.	Strap-bound block.
I. bd.	Iron-bound.	T.	Thimbles.
I. Tra.	Iron Trave.	Th. c.	Thin block, coaked.
L. t.	Long tackle-block.	Thk & th.	Thick-and-thin block.
Par.	Parral.	Tr.	Treble block.
Pl. d. e.	Plates with dead-eyes.	Tr. c.	Treble block, coaked.
Q.	Quarter block.	*	This mark denotes that the block or heart has a hook and thimble.
S.	Single block.		
S. c.	Single block, coaked.		
S. h.	Single hook-block.		

A T A B L E

OF THE
DIMENSIONS OF THE STANDING AND RUNNING RIGGING:
WITH THE
SPECIES, SIZE, AND NUMBER, OF BLOCKS, HEARTS, DEAD-EYES, &c.

Names of the standing and running Rigging.	Ships from 120 to 74 Guns, or from 3000 to 1800 Tons.			Ships from 64 Guns, or from 1700 to 1300 Tons.			Ships from 50 to 36 Guns, or from 1200 to 800 Tons.			Ships from 32 to 28 Guns, or from 700 to 600 Tons.			Ships of 24 Guns, or from 550 to 450 Tons.			Ships from 22 to 20 Guns, or from 400 to 350 Tons.			Ships from 18 to 14 Guns, or from 300 to 250 Tons.		
	Inches.	Species.	Blocks, &c.	Inches.	Species.	Blocks, &c.	Inches.	Species.	Blocks, &c.	Inches.	Species.	Blocks, &c.	Inches.	Species.	Blocks, &c.	Inches.	Species.	Blocks, &c.	Inches.	Species.	Blocks, &c.
HOWSPRIT.																					
Wooding	3½			3			3			2½			2½			2½			2		
Gammoning	8	*H.		7	*H.		6	*H.		5½	*H.		5	*H.		5	*H.	4½	*H.		
Shrouds	8	H.		13	H.		9	H.		9	H.		8	H.		7	H.	7	H.		
Collars	6½			4			2			2			2			2		2			
Seizing	1			1			1			1			1			1		1			
Lashing	2			2			1½			1½			1			1		1			
Laniard	3½			3			2½			2½			2			2		2			
Bobstays cabled	8½	H.		13	H.		7	H.		9	H.		8	H.		7	H.	5	H.		
Collars	1½			1½			1			1			1			1		1			
Seizing	8	H.		13	H.		9	H.		9	H.		8	H.		7	H.	5	H.		
Lashing	4			4			3			3			3			3		3			
Laniards	5			6			3			3			3			3		3			
Horses	3½	T.		4	T.		3	T.		3	T.		3	T.		3	T.	2½	T.		
Straps	4			4			4			4			4			4		4			
Laniards	2			2			1½			1½			1			1		1			

TABLE OF THE DIMENSIONS OF RIGGING, WITH THE SPECIES, SIZE, AND NUMBER, OF BLOCKS, &c. CONTINUED. 180

Names of the standing and running Rigging.	110 to 74 Guns.			64 Guns.			50 to 36 Guns.			32 to 28 Guns.			24 Guns.			22 to 20 Guns.			18 to 14 Guns.		
	Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.		
	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N
Out-Haller	4	S.	—	3½	S.	—	3	S.	—	3	S.	—	2½	S.	—	2½	S.	—	2	S.	—
Tackle-Fall	3	—	2	2	—	2	2	—	2	—	2	—	2	—	2	—	2	—	2	—	—
Strapping	2	—	—	2	—	—	2	—	—	—	—	—	2	—	—	2	—	—	—	—	—
Stay	4	S.	14	4	S.	13	3½	S.	11	3½	S.	11	3	S.	10	3	S.	10	3	S.	9
Strapping	4	—	—	4	—	—	4	—	—	—	—	—	4	—	—	4	—	—	4	—	—
Tackle-Fall	2½	D. S.	9	2½	D. S.	9	2	D. S.	7	2	D. S.	7	2	S.	7	2	S.	7	2	S.	6
Strapping	2½	—	—	2½	—	—	2	—	—	—	—	—	2	—	—	2	—	—	2	—	—
Haliard	4	S.	13	4	S.	12	3	S.	10	3	S.	10	2	S.	9	2	S.	9	2	S.	9
Strapping	4	—	—	4	—	—	4	—	—	—	—	—	4	—	—	4	—	—	4	—	—
Down-Haller	2	S.	9	2	S.	9	2	S.	7	2	S.	7	2	S.	6	2	S.	6	2	S.	6
Sheets, fingle	3	S.	11	3	S.	11	3	S.	10	3	S.	10	2	S.	9	2	S.	9	2	S.	9
Pendants	4	S.	11	4	S.	11	4	S.	11	4	S.	11	2	—	—	—	—	—	—	—	—
Flying-Jib	2	S.	8	2	S.	7	2	S.	7	2	S.	7	2	—	—	—	—	—	—	—	—
Haliard	2	—	—	2	—	—	2	—	—	—	—	—	2	—	—	2	—	—	2	—	—
Sheets	2	—	—	2	—	—	2	—	—	—	—	—	2	—	—	2	—	—	2	—	—
Tack	2	—	—	2	—	—	2	—	—	—	—	—	2	—	—	2	—	—	2	—	—
Down-Haller	1½	S.	5	1½	S.	5	1	S.	5	1	S.	5	1	S.	5	1	S.	5	1	S.	5
SPRITSAIL TOPSAIL AND YARD.																					
Horses	3	—	—	2½	—	—	2	—	—	—	—	—	2	—	—	2	—	—	2	—	—
Braces	2	—	—	2	—	—	2	—	—	—	—	—	2	—	—	2	—	—	2	—	—
Strapping	2	—	—	2	—	—	2	—	—	—	—	—	2	—	—	2	—	—	2	—	—
Lifts, fingle	2	S.	9	2	S.	8	2	S.	8	2	S.	7	2	T.	7	2	T.	7	2	T.	6
Strapping	2	—	—	2	—	—	2	—	—	—	—	—	2	—	—	2	—	—	2	—	—
Haliard	2	S.	9	2	S.	9	2	S.	7	2	S.	7	2	S.	7	2	S.	7	2	S.	6

Strapping	2 1/2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
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TABLE OF THE DIMENSIONS OF RIGGING, WITH THE SPECIES, SIZE, AND NUMBER, OF BLOCKS, &c. CONTINUED. 183

Names of the standing and running Rigging.	110 to 74 Guns.			64 Guns.			50 to 36 Guns.			32 to 28 Guns.			24 Guns.			22 to 20 Guns.			18 to 14 Guns.		
	Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.		
	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N
Lashing . . .	2½	—	—	2½	—	—	2	—	—	2	—	1½	1½	—	—	1½	—	—	1½	—	—
Preventer - Stay cable 4 Strands . . .	11½	H.	16	10½	—	—	8½	H.	12	7½	H.	12	7	H.	11	7	H.	11	6	H.	10
Laniard . . .	4½	—	—	4	—	—	3½	—	—	3½	—	—	3	—	—	3	—	—	2½	—	—
Collar cable 4 Strands double . . .	6½	H.	16	5½	—	—	4½	H.	12	4½	H.	12	4	H.	11	4	H.	11	4	H.	10
Lashing . . .	2½	—	—	2	—	—	1½	—	—	1½	—	—	1	—	—	1	—	—	1	—	—
Seizing . . .	1½	—	—	1½	—	—	1½	—	—	1½	—	—	1	—	—	1	—	—	1	—	—
Catharpin-Legs . . .	7	—	—	6½	—	—	5	—	—	5	—	—	4½	—	—	4	—	—	3½	—	—
Seizing . . .	1½	—	—	1½	—	—	1	—	—	1	—	—	1	—	—	1	—	—	1	—	—
Jeers + Tye . . .	7½	Tr. c.	26	6½	—	—	5½	D. c.	18	5	D. c.	18	4	—	—	3½	S. d. c.	20	7	S. d. c.	20
Falls . . .	—	D. c.	26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strapping . . .	8½	—	—	8	—	—	6½	—	—	6	—	—	5½	—	—	4	—	—	4	—	—
Seizings . . .	2	—	—	2	—	—	1	—	—	1	—	—	1	—	—	1	—	—	1	—	—
Lashing at the Mast Head . . .	4½	—	—	4	—	—	3½	—	—	3	—	—	3	—	—	3	—	—	3	—	—
Yard . . .	3½	—	—	3	—	—	2½	—	—	2	—	—	2	—	—	2	—	—	2	—	—
Stoppers . . .	6	—	—	5½	—	—	4½	—	—	4	—	—	4	—	—	4	—	—	3½	—	—
Horses . . .	5½	—	—	5	—	—	4½	—	—	4	—	—	4	—	—	4	—	—	3½	—	—
Stirrups . . .	4	—	—	4	—	—	3	—	—	3	—	—	3	—	—	3	—	—	3	—	—
Seizings . . .	4	—	—	4	—	—	3	—	—	3	—	—	3	—	—	3	—	—	3	—	—
Laniard . . .	4	—	—	4	—	—	3	—	—	3	—	—	3	—	—	3	—	—	3	—	—
Yard-Tackle	2	—	—	2	—	—	2	—	—	2	—	—	2	—	—	2	—	—	2	—	—
Pendants	7	D. th. c.	17	6½	—	—	5½	D. th. c.	14	5½	D. th. c.	14	5	D. th. c.	12	5	D. th. c.	12	4½	D. th. c.	11

† Ships of 28 Guns have their jeers similar to 24 Guns ships.

Names of the standing and running Rigging.	110 to 74 Guns.			64 Guns.			50 to 36 Guns.			32 to 28 Guns.			24 Guns.			22 to 20 Guns.			18 to 14 Guns.		
	Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.		
	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N
Lashing . . .	2½	—	—	2½	—	—	2	—	—	2	—	—	1½	—	—	1½	—	—	1½	—	—
Preventer - Stay cable 4 Strands . . .	11½	H.	16	10½	—	—	8½	H.	12	7½	H.	12	7	H.	11	7	H.	11	6	H.	10
Laniard . . .	4½	—	—	4	—	—	3½	—	—	3½	—	—	3	—	—	3	—	—	2½	—	—
Collar cable 4 Strands double . . .	6½	H.	16	5½	—	—	4½	H.	12	4½	H.	12	4	H.	11	4	H.	11	4	H.	10
Lashing . . .	2½	—	—	2	—	—	1½	—	—	1½	—	—	1	—	—	1	—	—	1	—	—
Seizing . . .	1½	—	—	1½	—	—	1½	—	—	1½	—	—	1	—	—	1	—	—	1	—	—
Catharpin-Legs . . .	7	—	—	6½	—	—	5	—	—	5	—	—	4½	—	—	4	—	—	3½	—	—
Seizing . . .	1½	—	—	1½	—	—	1	—	—	1	—	—	1	—	—	1	—	—	1	—	—
Jeers + Tye . . .	7½	Tr. c.	26	6½	—	—	5½	D. c.	18	5	D. c.	18	4	—	—	3½	S. d. c.	20	7	S. d. c.	20
Falls . . .	—	D. c.	26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strapping . . .	8½	—	—	8	—	—	6½	—	—	6	—	—	5½	—	—	4	—	—	4	—	—
Seizings . . .	2	—	—	2	—	—	1	—	—	1	—	—	1	—	—	1	—	—	1	—	—
Lashing at the Mast Head . . .	4½	—	—	4	—	—	3½	—	—	3	—	—	3	—	—	3	—	—	3	—	—
Yard . . .	3½	—	—	3	—	—	2½	—	—	2	—	—	2	—	—	2	—	—	2	—	—
Stoppers . . .	6	—	—	5½	—	—	4½	—	—	4	—	—	4	—	—	4	—	—	3½	—	—
Horses . . .	5½	—	—	5	—	—	4½	—	—	4	—	—	4	—	—	4	—	—	3½	—	—
Stirrups . . .	4	—	—	4	—	—	3	—	—	3	—	—	3	—	—	3	—	—	3	—	—
Seizings . . .	4	—	—	4	—	—	3	—	—	3	—	—	3	—	—	3	—	—	3	—	—
Laniard . . .	4	—	—	4	—	—	3	—	—	3	—	—	3	—	—	3	—	—	3	—	—
Yard-Tackle	2	—	—	2	—	—	2	—	—	2	—	—	2	—	—	2	—	—	2	—	—
Pendants	7	D. th. c.	17	6½	—	—	5½	D. th. c.	14	5½	D. th. c.	14	5	D. th. c.	12	5	D. th. c.	12	4½	D. th. c.	11

[illegible]

TABLE OF THE DIMENSIONS OF RIGGING, WITH THE SPECIES, SIZE, AND NUMBER, OF BLOCKS, &c. CONTINUED. 186

Names of the standing and running Rigging.	110 to 74 Guns.			64 Guns.			50 to 36 Guns.			32 to 28 Guns.			24 Guns.			22 to 20 Guns.			18 to 14 Guns.		
	Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.		
	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N
Falls	2½	D.	10 4	2½	D.	10 4	2½	D.	10 4	2½	D.	10 4	2	D.	8 4	2	D.	7 2	2	D.	7 2
Strapping	3	—	—	3	—	—	3	—	—	3	—	—	2½	—	—	2½	—	—	2½	—	—
Stay cabled 4 Strands	8½	—	—	7½	—	—	6	—	—	5½	—	—	5½	—	—	5	—	—	5	—	—
Collar	6½	S.	20 1	6	S.	18 1	5	S.	15 1	5	S.	15 1	5	S.	15 1	4½	S.	14 1	4	S.	13 1
Tackle	3½	L.t.	24 1	3	L.t.	20 1	2½	L.t.	18 1	2½	L.t.	18 1	2½	L.t.	18 1	2½	L.t.	16 1	2½	L.t.	15 1
Strapping	5	S.	14 1	4	S.	12 1	3½	S.	10 1	3½	S.	9 1	3½	S.	9 1	3	S.	8 1	3	S.	8 1
Seizing	1½	—	—	1½	—	—	1½	—	—	1½	—	—	1½	—	—	1½	—	—	1½	—	—
Preventer-Stay ca- bled 4 Strands . . .	6½	—	—	5½	—	—	4½	—	—	4	—	—	4	—	—	4	—	—	4	—	—
Collar	5	S.	16 1	5	S.	15 1	4	S.	12 1	4	S.	12 1	4	S.	12 1	3½	S.	11 1	3	S.	10 1
Tackle	3	L.t.	18 1	2½	L.t.	16 1	2	L.t.	16 1	2	L.t.	16 1	2	L.t.	16 1	2	L.t.	15 1	2	L.t.	14 1
Strapping	4	S.	12 1	3½	S.	10 1	3	S.	8 1	3	S.	8 1	3	S.	8 1	3	S.	7 1	3	S.	7 1
Seizing	1	—	—	1	—	—	1	—	—	1	—	—	1	—	—	1	—	—	1	—	—
Leaving the Col.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Shifting Backdays .	2½	T.	—	2½	T.	—	2	T.	—	2	T.	—	2	T.	—	2	T.	—	2	T.	—
Tackles	7	*D.	12 4	6½	*D.	10 4	5½	*D.	10 4	5½	*D.	10 4	5	*D.	8 4	4½	*D.	8 4	4½	*D.	8 4
Strapping	3	*S.	12 4	3	*S.	10 4	2½	*S.	10 4	2½	*S.	10 4	2	*S.	8 4	2	*S.	8 4	2	*S.	8 4
Futtock-Shrouds . .	4	*Pl d.c.	11 12	4	*Pl d.c.	10 12	3½	*Pl d.c.	8 8	3½	*Pl d.c.	8 8	3	*Pl d.c.	8 8	3	*Pl d.c.	7 8	3	*Pl d.c.	7 8
Seizing { Upper	7	—	—	6½	—	—	5½	—	—	5½	—	—	5	—	—	4½	—	—	4½	—	—
Lower	1½	—	—	1½	—	—	1½	—	—	1½	—	—	1	—	—	1	—	—	1	—	—
Ratline	1½	—	—	1½	—	—	1½	—	—	1½	—	—	1	—	—	1	—	—	1	—	—

Top-Rope Pendants {	9	S. Br. shi.	26	2	8½	S. Br. shi.	22	2	7	S. Br. shi.	20	2	6½	S. Br. shi.	18	2	6	S. Br. shi.	17	2	6	S. Br. shi.	16	1
		I. bd. c.			I. bd. c.					I. bd. c.			I. bd. c.					I. bd. c.				I. bd. c.		

Top-Rope Pendants	9	S. Br. shi.	26	2	8½	S. Br. shi.	22	2	7	S. Br. shi.	20	2	6½	S. Br. shi.	18	2	6	S. Br. shi.	17	2	6	S. Br. shi.	16	1	S. Br. shi.	16	1
		I. bd. c.			I. bd. c.				I. bd. c.				I. bd. c.					I. bd. c.				I. bd. c.			I. bd. c.		
Falls	5	Tr. l.b.c.	24	2	4	Tr. l.b.c.	21	4	4	Tr. l.b.c.	15	4	3½	Tr. l.b.c.	15	4	3	Tr. l.b.c.	14	4	2	Tr. l.b.c.	14	2	Tr. l.b.c.	14	2
Tye	6	Fl. f.c.	20	2	5½	Fl. f.c.	18	2	4½	Fl. f.c.	16	2	4½	Fl. f.c.	15	2	4	Fl. f.c.	15	2	4	Fl. f.c.	14	1	Fl. f.c.	14	1
Strapping	6½	D. c.	20	1	5½	D. c.	18	1	4½	D. c.	16	1	4½	D. c.	15	1	4	D. c.	15	1	4	D. c.	14	1	D. c.	14	1
Seizing	1				1				1				1				1										
Lashers	2½				2				1½				1½				1										
Mast-Head	2				2				1½				1½				1										
Yard	3½	D. th. c.	26	2	3½	D. th. c.	24	2	3	D. th. c.	19	2	3	D. th. c.	18	2	2½	D. th. c.	17	2	2½	D. th. c.	16	2	D. th. c.	14	1
Haliards	5	*S. th. c.	26	2	4½	*S. th. c.	24	2	4	*S. th. c.	19	2	3½	*S. th. c.	18	2	3½	*S. th. c.	17	2	3½	*S. th. c.	16	2	*S. th. c.	14	1
Strapping	4				4				3½				3½				3										
Seizing	4				4				3				3				2½										
Horses	3	T.			3	T.			3	T.			3	T.			3	T.							T.		
Stirrups	3½	S.			3½	S.			3	S.			3½	S.			2½	S.							S.		
Braces	4½	S.			4½	S.			3½	S.			3½	S.			2½	S.							S.		
Pendants	4				4				3				3				2½										
Preventer	4				4				3				3				2½										
Strapping	4				4				3				3				2½										
Lifts	3½	D.			3½	D.			3	D.			3	D.			2½								Sif.	14	2
Beckets	4	S.			4	S.			3	S.			3	S.			2½	S.							S.	8	4
Strapping	4				4				3				3				2½										
Seizing	4				4				3				3				2½										
Paral. Ropes	3½	Par.			3½	Par.			2½	Par.			2½	Par.			2½	Par.							Par.	14	1
Racking & Seizing	1				1				2½				2½				2½										
Clew-lines	4	S. ft. bd.	14	4	3½	S. ft. bd.	12	4	3	S. ft. bd.	10	4	2½	S. ft. bd.	9	4	2½	S. ft. bd.	9	4	2	S. ft. bd.	8	4	S. ft. bd.	8	4
Strapping	4	S.			3½	S.			3	S.			2½	S.			2½	S.							S.	8	2
Stunt-lines	4				3½				3				2½				2½										
Strapping	3				3				2½				2½				2								S.	7	4
Leech-lines	3				3				2½				2½				2										
Strapping	2½	S.			2½	S.			2	S.			2	S.			2								S.	6	2
Bow-lines	3	S.			3	S.			2½	S.			2½	S.			2								S.	8	2

TABLE OF THE DIMENSIONS OF RIGGING, WITH THE SPECIES, SIZE, AND NUMBER, OF BLOCKS, &c. CONTINUED. 183

Names of the standing and running Rigging.	110 to 74 Guns.			64 Guns.			50 to 36 Guns.			32 to 28 Guns.			24 Guns.			22 to 20 Guns.			18 to 14 Guns.		
	Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.		
	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N
Bridles	3½	T.	4	3	T.	4	2½	T.	4	2½	T.	4	2½	T.	4	2½	T.	4	2	T.	4
Strapping	3½			3			2½			2½			2½			2½			2		
Lashing	1½			1			1			1			1			1			1		
Reef-tackle-Pendants .	4	*D.	4	3½	*D.	4	3	*D.	4	3	*D.	4	2½	*S.	4	2½	*S.	4	2	*S.	4
Falls	4		2	2½		2	1½		2	1½		2	1½		2	1½		2	1½		2
Strapping	3			2½			1½			1½			1½			1			1		
Ear-rings	1½			1½																	
Sheets	8	S. Sho. 26 thk & 26 th. c.	2	7	S. Sho. 24 thk & 24 th. c.	2	5½	S. Sho. 17 thk & 17 th. c.	2	5½	S. Sho. 17 thk & 17 th. c.	2	5	S. Sho. 16 thk & 16 th. c.	2	4½	S. Sho. 15 thk & 15 th. c.	2	4	S. Sho. 14 thk & 14 th. c.	2
Straps { Sheet Blocks for Quarter-Blocks Leathers for Quarter Blocks	8			7½			6			6			5½			5			4½		
Seizings	6			5½			4½			4½			4			4			3½		
Span	2½			2			2			2			1½			1			1		
Stoppers	1½			1½			1			1			¾			¾			¾		
Slings	3½			3			3			3			3			3			3		
Stay-fail-Stay	6½			5½			4½			4½			3½			3			3		
Tackle	5	S.	13	4	S.	13	3½	S.	11	3½	S.	11	3	S.	10	3	S.	10	2½	S.	9
Halard	4	D.	10	2	D.	8	2	D.	8	2	D.	7	1½	D.	6	1	S.	8	2	S.	8
Strapping	2½	S.	9	1	S.	8	1	S.	7	1	S.	6	1	S.	5	1	S.	4	1	S.	4
Sheets	3½		12	3½		12	3		10	3		10	2		8	2		8	1		8
Strapping	3½		12	3		12	3		10	3		10	2		8	2		8	1		8
Strapping	4	S.	13	3½	S.	12	3	S.	10	3	S.	10	2	S.	9	2	S.	9	2	S.	9
Out-Haller	4	S.	9	2½	S.	9	2	S.	7	2	S.	7	1	S.	7	1	S.	7	1	S.	6

Down-Haller	2½	S.	9	1	2	S.	9	1	2	S.	7	1	2	S.	6	1	2	S.	6	1	2	S.	5	1	2
-----------------------	----	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---

TABLE OF THE DIMENSIONS OF RIGGING, WITH THE SPECIES, SIZE, AND NUMBER, OF BLOCKS, &c. CONTINUED. 199

Names of the Standing and running Rigging.	110 to 74 Guns.			64 Guns.			50 to 36 Guns.			32 to 28 Guns.			24 Guns.			22 to 20 Guns.			18 to 14 Guns.		
	In.	Species.	In N	In	Species.	In N	In.	Species.	In N	In	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N
Parral-Ropes	12	Par.	1	11	Par.	1	1	Par.	8	1	1	8	1	Par.	8	1	1	8	1	Par.	6
Clew-lines	7	S.	6	7	S.	6	6	S.	6	4	4	6	4	S.	4	4	4	6	S.	4	4
Strapping	7	S.	6	7	S.	6	6	S.	6	4	4	6	4	S.	4	4	4	6	S.	4	4
Bow lines	7	T.	6	7	T.	6	6	T.	6	4	4	6	4	T.	6	4	4	6	T.	4	4
Bridles	7	T.	6	7	T.	6	6	T.	6	4	4	6	4	T.	6	4	4	6	T.	4	4
Strapping	7	T.	6	7	T.	6	6	T.	6	4	4	6	4	T.	6	4	4	6	T.	4	4
Ear-rings	7	T.	6	7	T.	6	6	T.	6	4	4	6	4	T.	6	4	4	6	T.	4	4
Shifting Backstays	7	T.	6	7	T.	6	6	T.	6	4	4	6	4	T.	6	4	4	6	T.	4	4
Tackles	7	T.	6	7	T.	6	6	T.	6	4	4	6	4	T.	6	4	4	6	T.	4	4
Strapping	7	T.	6	7	T.	6	6	T.	6	4	4	6	4	T.	6	4	4	6	T.	4	4
Studding-sail Halyards	7	T.	6	7	T.	6	6	T.	6	4	4	6	4	T.	6	4	4	6	T.	4	4
Sheets	7	T.	6	7	T.	6	6	T.	6	4	4	6	4	T.	6	4	4	6	T.	4	4
Tacks	7	T.	6	7	T.	6	6	T.	6	4	4	6	4	T.	6	4	4	6	T.	4	4
Down-Hallers	7	T.	6	7	T.	6	6	T.	6	4	4	6	4	T.	6	4	4	6	T.	4	4
Strapping	7	T.	6	7	T.	6	6	T.	6	4	4	6	4	T.	6	4	4	6	T.	4	4
MAIN-MAST.																					
Woodings	3	S.	3	15	S.	2	2	S.	13	2	2	2	2	S.	12	2	2	2	S.	9	2
Girdlines	5	S.	5	3	S.	3	3	S.	3	3	3	3	3	S.	3	3	3	3	S.	3	3
Strapping	5	S.	5	3	S.	3	3	S.	3	3	3	3	3	S.	3	3	3	3	S.	3	3
Seizing	2	S.	2	10	S.	10	10	S.	8	1	1	1	1	S.	8	1	1	1	S.	7	1
Lashing	2	S.	2	10	S.	10	10	S.	8	1	1	1	1	S.	8	1	1	1	S.	7	1
Pendants of Tackles	11	S.	11	22	S.	22	22	S.	17	2	2	2	2	S.	17	2	2	2	S.	15	2
cabled	7	T.	7	8	T.	8	8	T.	5	1	1	1	1	T.	5	1	1	1	T.	4	1
Strapping	7	T.	7	8	T.	8	8	T.	5	1	1	1	1	T.	5	1	1	1	T.	4	1
Seizing	1	T.	1	1	T.	1	1	T.	1	1	1	1	1	T.	1	1	1	1	T.	1	1

	S. th. c.	17	16	15	14	13	S. th. c.
Runners of Tackles .	7½ 6	4 —	5½ 5	2 —	4½ 4	2 —	4 —
Strapping	—	—	—	—	—	—	—

Runners of Tackles .	7½	S. th. c.	21	4	6½	S. th. c.	21	4	5½	S. th. c.	17	4	5½	S. th. c.	16	2	5	S. th. c.	15	2	4½	S. th. c.	15	2	4½	S. th. c.	13	2	4	S. th. c.	13	2
Strapping	6	*S. th. c.	26	4	4	*S. th. c.	24	4	3	*S. th. c.	18	4	3	*S. th. c.	17	4	4	*S. th. c.	15	2	3	*S. th. c.	15	2	3	*S. th. c.	9	2	2½	*S. th. c.	9	2
Falls of Tackles . . . }	4	—	—	—	—	—	—	—	5	—	—	—	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Strapping	5½	—	—	—	5½	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Seizing	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Shrouds cabled . . . }	11	D. E.	17	20	10½	D. E.	16	18	8½	D. E.	13	14	8	D. E.	13	14	7½	D. E.	11	12	7	D. E.	11	12	7	D. E.	10	10	7	D. E.	10	10
Eye	1½	—	—	—	1½	—	—	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Seizing { Throat . . .	1½	—	—	—	1½	—	—	—	1½	—	—	—	1½	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
End	1½	—	—	—	1½	—	—	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Laniard	5½	—	—	—	5	—	—	—	4	—	—	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Ratline	1½	—	—	—	1½	—	—	—	1½	—	—	—	1½	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Stay cabled 4 frands .	19	H.	26	1	17½	H.	22	1	14½	H.	19	1	12½	H.	17	1	11½	H.	16	1	10	H.	16	1	10	H.	15	1	10	H.	15	1
Seizing	2	—	—	—	2	—	—	—	4½	—	—	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Laniard	2	—	—	—	2	—	—	—	4	—	—	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Collar cabled 4 frands	14	H.	26	1	12½	H.	22	1	10	H.	19	1	9	H.	17	1	8½	H.	16	1	8	H.	12	1	7	H.	11	1	7	H.	11	1
Worming	2	—	—	—	2	—	—	—	1½	—	—	—	1½	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Seizing	2	—	—	—	2	—	—	—	3	—	—	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Lashing	4	—	—	—	3½	—	—	—	1½	—	—	—	1½	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Preventer-Stay ca-	13	H.	17	1	12	H.	16	1	10	H.	14	1	8½	H.	13	1	8	H.	12	1	8	H.	12	1	7	H.	11	1	7	H.	11	1
bled 4 frands . . . }	5	—	—	—	4	—	—	—	3	—	—	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Laniard	6	H.	17	1	6	H.	16	1	5	H.	14	1	5	H.	13	1	4½	H.	12	1	4½	H.	12	1	4½	H.	11	1	4½	H.	11	1
Collar cabled 4 frands	2	—	—	—	2	—	—	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Lashing	2	—	—	—	1½	—	—	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Seizing	1½	—	—	—	6½	—	—	—	5	—	—	—	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Catharpin-Legs . . .	7	—	—	—	12	—	—	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Seizings	1½	—	—	—	6	—	—	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Stay-Tackle Pendant	6	D. th. c.	18	1	12	D. th. c.	17	1	5	D. th. c.	14	1	5	D. th. c.	14	1	5	D. th. c.	12	1	5	D. th. c.	12	1	5	D. th. c.	12	1	5	D. th. c.	12	1
Falls	3½	*S. th. c.	20	1	3½	*S. th. c.	18	1	3	*S. th. c.	16	1	3	*S. th. c.	16	1	3	*S. th. c.	13	1	3	*S. th. c.	13	1	3	*S. th. c.	13	1	3	*S. th. c.	13	1
Strapping	4½	—	—	—	4	—	—	—	4	—	—	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Seizing	4½	—	—	—	1½	—	—	—	1½	—	—	—	1½	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Lashing	1½	—	—	—	1½	—	—	—	1½	—	—	—	1½	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

TABLE OF THE DIMENSIONS OF RIGGING, WITH THE SPECIES, SIZE, AND NUMBER, OF BLOCKS, &c. CONTINUED. 192

Names of the standing and running Rigging.	110 to 74 Guns.			64 Guns.			50 to 36 Guns.			32 to 28 Guns.			24 Guns.			22 to 20 Guns.			18 to 14 Guns.		
	Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.		
	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N
Fore-Hatch Tackle- Fall †	3½	D. th. c. 18	1	3½	D. th. c. 16	1	3	D. th. c. 14	1	3	D. th. c. 14	1	3	D. th. c. 12	1	3	D. th. c. 12	1	3	D. th. c. 12	1
Strapping	4½	*S. th. c. 20	1	4½	*S. th. c. 18	1	4	*S. th. c. 16	1	4	*S. th. c. 16	1	4	*S. th. c. 14	1	4	*S. th. c. 14	1	4	*S. th. c. 14	1
Seizing	4½	*S. th. c. 14	1	4½	*S. th. c. 14	1	4	*S. th. c. 12	1	4	*S. th. c. 12	1	4	*S. th. c. 11	1	4	*S. th. c. 11	1	4	*S. th. c. 11	1
Jacks † { Tye { Falls	8	Tr. c. 28	2	8	Tr. c. 26	2	6	D. c. 19	4	5½	D. c. 19	4	5½	S. d. f. c. 20	3	7½	S. d. f. c. 20	3	7	S. d. f. c. 20	3
Strapping	9	D. c. 28	2	8	D. c. 26	2	6½	—	—	6	—	—	5½	D. S.	2	3	D. S.	2	5	D. S.	2
Seizing	2	—	—	2	—	—	1	—	—	—	—	—	3	—	—	—	—	—	—	—	—
Lashers { Mast-Head to the { Yard	4½	—	—	4	—	—	3½	—	—	3	—	—	3	—	—	—	—	—	—	—	—
Stoppers	6	—	—	6	—	—	4½	—	—	4	—	—	4	—	—	—	—	—	—	—	—
Horses	5½	—	—	5	—	—	4½	—	—	4	—	—	4	—	—	—	—	—	—	—	—
Stirrups	4	—	—	4	—	—	4	—	—	4	—	—	4	—	—	—	—	—	—	—	—
Seizing	4	T.	—	4	T.	—	4	T.	—	4	T.	—	4	T.	—	4	T.	—	4	T.	—
Laniards	2	—	—	2	—	—	2	—	—	2	—	—	2	—	—	—	—	—	—	—	—
Yard-Tackle Pendants	7	D. th. c. 17	2	6½	D. th. c. 16	2	5½	D. th. c. 14	2	5½	D. th. c. 14	2	5	D. th. c. 12	2	5	D. th. c. 12	2	4½	D. th. c. 11	2
Falls	3½	*S. th. c. 20	2	3½	*S. th. c. 18	2	3	*S. th. c. 16	2	3	*S. th. c. 16	2	3	*S. th. c. 14	2	3	*S. th. c. 14	2	2½	*S. th. c. 13	2
Strapping	5½	S.	—	5	S.	—	4	S.	—	4	S.	—	3½	S.	—	3½	S.	—	3	S.	—
Seizing	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Inner Tricing-Lines .	2½	S.	—	2	S.	—	2	S.	—	2	S.	—	2	S.	—	2	S.	—	2	S.	—
Outer Tricing-Lines	2	S.	—	2	S.	—	2	S.	—	2	S.	—	2	S.	—	2	S.	—	2	S.	—

† The Stay and Fore-Hatch Tackle have 2 thimbles.

‡ Main Jeers of a 28-gun ship have three 21-inch single blocks with double flukes and coaked; two 13-inch treble blocks, coaked; and two 13-inch double blocks, coaked.

— The Stay and Fore-Hatch Tackle have a thimble

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TABLE OF THE DIMENSIONS OF RIGGING, WITH THE SPECIES, SIZE, AND NUMBER, OF BLOCKS, &c. CONTINUED. 194

Names of the standing and running Rigging.	110 to 74 Guns.			64 Guns.			50 to 36 Guns.			32 to 28 Guns.			24 Guns.			22 to 20 Guns.			18 to 14 Guns.		
	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N
Strapping . . .	3½	S.	9	3½	S.	8	3	S.	7	3	S.	6	2½	S.	6	2½	S.	6	2½	S.	6
Stablins . . .	2½	D.	16	2½	D.	16	2	D.	14	2	D.	12	1½	D.	12	1½	D.	12	1½	D.	12
Strapping . . .	4½	T.	6	4½	T.	6	3½	T.	6	3½	T.	6	3	T.	6	3	T.	6	3	T.	6
Bowlines . . .	4½			4½			3½			3½			3			3			3		
Bridles . . .	4½			4½			3½			3½			3			3			3		
Strapping . . .	4½			4½			3½			3½			3			3			3		
Seizing . . .	2			2			2			2			1½			1½			1½		
Lashing . . .	3			3			2			2			1½			1½			1½		
Tackles . . .	3	*L. t.	20	3	*S.	11	2½	*L. t.	14	2½	*S.	8	2	*D.	8	2	*S.	8	2	*D.	8
Strapping . . .	3½			3½			3			3			2			2			2		
Ear-rings . . .	2			2			1½			1½			1			1			1		
Sheets cabled . . .	7½	S. c.	24	7½	S. c.	32	6½	S. c.	17	6½	S. c.	15	5½	S. c.	15	5½	S. c.	15	5½	S. c.	14
Strapping . . .	7½	T.	4	7½	T.	4	6½	T.	4	6½	T.	4	5½	T.	4	5½	T.	4	5½	T.	4
Seizing . . .	1½			1½			1½			1½			1			1			1		
Lashers . . .	2			2			2			2			1½			1½			1½		
Stoppers . . .	6			6			5½			5½			4			4			4		
Tacks taper and cabled	10			10			8½			8½			7			7			7		
Stoppers . . .	6	H. & T.	2	6	H. & T.	2	5½	H. & T.	2	5½	H. & T.	2	4½	H. & T.	2	4½	H. & T.	2	4½	H. & T.	2
Laniards . . .	2			2			1½			1½			1			1			1		
Laniards for Pud. & Dol.	12	T.	4	12	T.	4	11	T.	4	11	T.	4	10	T.	4	10	T.	4	10	T.	4
Slings . . .	12			12			11			11			10			10			10		
Straps . . .	2			2			1½			1½			1			1			1		
Seizing . . .	2			2			1½			1½			1			1			1		
Laniard . . .	3½			3½			3			3			2½			2½			2½		
Quarter Tack. Pendants	6	D. th. c	18	6	D. th. c	17	5	D. th. c	14	5	D. th. c	14	5	D. th. c	12	5	D. th. c	12	4½	D. th. c	11

Falls	3½	*S. th. c.	20	3½	*S. th. c.	19	3	*S. th. c.	16	3	*S. th. c.	13	3	*S. th. c.	14	3	*S. th. c.	14	2½	*S. th. c.	13
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[illegible]

+ One beek and thimble to stayfai baliard and beech

TABLE OF THE DIMENSIONS OF RIGGING, WITH THE SPECIES, SIZE, AND NUMBER, OF BLOCKS, &c. CONTINUED. 198

Names of the standing and running Rigging.	110 to 74 Guns.			64 Guns.			50 to 36 Guns.			32 to 28 Guns.			24 Guns.			22 to 20 Guns.			18 to 14 Guns.		
	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N
Racking & Seizings																					
Clew-lines	1	S. fl. bd.	14	3	S. fl. bd.	12	3	S. fl. bd.	10	3	S. fl. bd.	10	2	S. fl. bd.	9	2	S. fl. bd.	9	2	S. fl. bd.	8
	4	S.	14	3	S.	12	3	S.	10	3	S.	10	2	S.	9	2	S.	9	2	S.	8
Strapping	4	S.	11	3	S.	10	3	S.	8	2	S.	8	4	S.	7	4	S.	7	4	S.	7
Bunt-Lines	3	S.	16	2	S.	9	2	S.	7	2	S.	7	2	S.	6	2	S.	6	2	S.	6
Strapping	2	S.	15	2	S.	14	2	S.	11	2	S.	11	6	S.	11	2	S.	11	2	S.	11
Leech-Lines	2	S.	15	2	S.	14	2	S.	11	2	S.	11	6	S.	11	2	S.	11	2	S.	11
Strapping	4	T.	6	4	T.	6	3	T.	3	3	T.	3	3	T.	3	3	T.	3	3	T.	3
Bow-lines	4	T.	6	4	T.	6	3	T.	3	3	T.	3	3	T.	3	3	T.	3	3	T.	3
Bridles	4	T.	6	4	T.	6	3	T.	3	3	T.	3	3	T.	3	3	T.	3	3	T.	3
Strapping	4	T.	6	4	T.	6	3	T.	3	3	T.	3	3	T.	3	3	T.	3	3	T.	3
Seizing	4	T.	6	4	T.	6	3	T.	3	3	T.	3	3	T.	3	3	T.	3	3	T.	3
Frapping & Lashing	3	D.	9	3	D.	9	3	D.	7	3	D.	7	4	D.	7	3	D.	7	3	D.	7
Reef-Tackle	4	T.	2	4	T.	2	3	T.	2	3	T.	2	2	T.	2	2	T.	2	2	T.	2
Pendants	3	T.	2	3	T.	2	2	T.	2	2	T.	2	2	T.	2	2	T.	2	2	T.	2
Falls	3	T.	2	3	T.	2	2	T.	2	2	T.	2	2	T.	2	2	T.	2	2	T.	2
Strapping	3	T.	2	3	T.	2	2	T.	2	2	T.	2	2	T.	2	2	T.	2	2	T.	2
Ear-rings	1	S. Sho.	26	1	S. Sho.	24	1	S. Sho.	17	1	S. Sho.	17	2	S. Sho.	16	1	S. Sho.	15	1	S. Sho.	14
	8	D. thk	26	7	D. thk	24	6	D. thk	17	6	D. thk	17	2	D. thk	16	5	D. thk	15	4	D. thk	14
	8	& th. c.		7	& th. c.		6	& th. c.		6	& th. c.			& th. c.			& th. c.			& th. c.	
Sheets	8			7			6			6						5			5		
Straps	8			7			6			6						5			5		
Sheet-Blocks	6			6			4			4						4			4		
for Quarter do	2			2			2			2						2			2		
Lashers for Quarter do	2			2			2			2						2			2		
Seizings	2			2			2			2						2			2		
Span	3			3			3			3						3			3		
Stoppers	6			6			4			4						3			3		

TABLE OF THE DIMENSIONS OF RIGGING, WITH THE SPECIES, SIZE, AND NUMBER, OF BLOCKS, &c. CONTINUED.— 309

Names of the standing and running Rigging.	110 to 74 Guns.			64 Guns.			50 to 36 Guns.			34 to 28 Guns.			24 Guns.			22 to 20 Guns.			18 to 14 Guns.		
	Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.		
	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N
Standing-Backstays . . .	4	D. E.	7	4	D. E.	6	4	3	D. E.	6	4	3	D. E.	6	4	2½	T.	4	2½	T.	4
Laniards . . .	2	S.	13	1	S.	12	1	3½	S.	11	1	3½	S.	10	1	1	T.	1	1	T.	1
Stay cabled 4 Strands	4½	T.	1	—	T.	—	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—
Flagstaff Stay . . .	3½	—	—	—	—	—	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—
Hallard . . .	1½	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
Royal-Hallard . . .	2	—	—	—	—	—	—	1½	—	—	—	—	—	—	—	—	—	—	—	—	—
Tye . . .	4	—	—	—	—	—	—	3½	—	—	—	—	—	—	—	—	—	—	—	—	—
Halliards . . .	2	D. S.	8	1	D. S.	8	1	1½	D. S.	7	1	1½	D. S.	7	1	1½	S.	6	1½	S.	6
Strapping . . .	3½	—	—	—	—	—	—	2	—	—	—	2	—	—	—	2	—	—	2	—	—
Horses . . .	3	S.	8	2	S.	7	2	2½	S.	6	2	2½	S.	6	2	2½	S.	6	2	S.	6
Braces . . .	3	S.	8	2	S.	7	2	1½	S.	7	2	1½	S.	6	2	1½	S.	6	2	S.	6
Pendants . . .	3	S.	8	2	S.	7	2	2	S.	7	2	2	S.	6	2	2	S.	6	2	S.	6
Strapping . . .	2½	S.	8	2	S.	7	2	2	S.	7	2	2	S.	6	2	2	T.	2	2	T.	2
Lifts, fingle . . .	2½	T.	—	—	T.	—	—	2	—	—	—	2	—	—	—	2	—	—	2	—	—
Strapping . . .	2½	Par.	12	1	Par.	12	1	2	Par.	9	1	2	Par.	9	1	1½	Par.	8	1	Par.	7
Parrel-Ropes . . .	2	S.	12	6	S.	7	6	1½	S.	6	6	1½	S.	6	6	1½	S.	6	4	S.	5
Clew-lines . . .	2	S.	7	—	S.	7	—	2	—	—	—	2	—	—	—	2	—	—	2	—	—
Strapping . . .	2	S.	7	2	S.	7	2	1½	S.	6	2	1½	S.	6	2	1½	S.	6	2	S.	2
Bow-Lines . . .	2	T.	7	2	T.	7	2	1½	T.	—	—	1½	T.	—	—	1½	T.	—	1	—	—
Bridles . . .	2	—	—	—	—	—	—	1½	—	—	—	1½	—	—	—	1½	—	—	1	—	—
Strapping . . .	2	—	—	—	—	—	—	1½	—	—	—	1½	—	—	—	1½	—	—	1	—	—
Ear-Rings . . .	2	—	—	—	—	—	—	1½	—	—	—	1½	—	—	—	1½	—	—	1	—	—
Shifting Backstays . .	4	T.	2	—	T.	—	—	3	T.	—	—	3	T.	—	—	3	T.	—	2½	T.	1

[illegible]

[illegible]

TABLE OF THE DIMENSIONS OF RIGGING, WITH THE SPECIES, SIZE, AND NUMBER, OF BLOCKS, &c. CONTINUED. 203

Names of the Standing and running Rigging.	110 to 74 Guns.			64 Guns.			50 to 36 Guns.			32 to 28 Guns.			24 Guns.			22 to 20 Guns.			18 to 14 Guns.		
	In.	Species.	Blocks, &c.	In.	Species.	Blocks, &c.	In.	Species.	Blocks, &c.	In.	Species.	Blocks, &c.	In.	Species.	Blocks, &c.	In.	Species.	Blocks, &c.	In.	Species.	Blocks, &c.
Collar	7	T.	1	6½	T.	1	5	T.	1	5	T.	1	5	T.	1	4½	T.	1	4½	T.	1
Seizing	1½			1½			1½			1½			1½			1			1		
Lashing	6	Tr. c.	18	5	Tr. c.	18	4½	Tr. c.	16	4	D. c.	16	3½	D. c.	13	3	D. c.	13	3	D. c.	11
Jacks	6½	D. c.	18	5½	D. c.	18	4½	D. c.	16	4	S. c.	16	3½	S. c.	13	3	S. c.	13	3	S. c.	11
Strapping	1½			1½			1½			1½			1½			1			1		
Seizing	3			2½			2½			2½			2½			2			2		
Lashing { Mast-Head	4½			4			4			4			4			3½			3½		
at the Yard	4½			4			4			4			4			3½			3½		
Derrick	4½			4			4			4			4			3½			3½		
Span	1			1			1			1			1			1			1		
Strapping	15	D.	14	4	D.	14	3½	D.	12	3	D.	12	3	D.	11	3	D.	11	3	D.	10
Seizing	15	S.	14	4	S.	14	3½	S.	12	3	S.	12	3	S.	11	3	S.	11	3	S.	9
Lashing	1	T.	1	1	T.	1	1	T.	1	1	T.	1	1	T.	1	1	T.	1	1	T.	1
Vang-Pendants	2			1			1			1			1			1			1		
Falls	4½	D.	8	4	D.	8	3½	D.	8	4	*S.	8	3	*S.	8	3	*S.	8	3	*S.	6
Strapping	3	*S.	2	3	*S.	2	2	*S.	4	2	*S.	4	2	*S.	4	2	*S.	4	2	*S.	6
Bowlines	3			3			3			3			3			3			3		
Strapping	3	S.	10	3	S.	10	2½	S.	9	2	S.	9	2	S.	8	2	S.	8	2	S.	2
Trufo-Pendants	5	T.	2	4	T.	2	3	T.	2	3	T.	2	3	T.	2	3	T.	2	3	T.	2
Falls	2½	*L. t.	18	2½	*L. t.	18	2	*L. t.	15	1	*L. t.	15	1	*L. t.	14	1	*L. t.	14	1	*L. t.	7
Strapping	3	*S.	9	3	*S.	9	2½	*S.	8	1	*S.	8	1	*S.	6	1	*S.	6	1	*S.	2
Brail-Peek-Lega	2			2			2			2			2			2			2		
Falls	2	S.	7	2	S.	7	2	S.	6	1	S.	6	1	S.	6	1	S.	6	1	S.	6

[illegible]

[illegible]

TABLE OF THE DIMENSIONS OF RIGGING, WITH THE SPECIES, SIZE, AND NUMBER, OF BLOCKS, &c. CONTINUED. 201

Names of the standing and running Rigging.	110 to 14 Guns.			64 Guns.			50 to 36 Guns.			32 to 28 Guns.			24 Guns.			21 to 20 Guns.			18 to 14 Guns.		
	Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.		
	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N
Guy-Pendants	3½	H. & T.	4	3½	H. & T.	4	3½	*D.	8	3	*D.	8	2½	*D.	8	2½	*D.	7	2½	*D.	7
Falls	2½	*S.	9	2½	*S.	9	2	*S.	8	2	*S.	8	2	*S.	8	2	*S.	7	2	*S.	7
Boom-Sheet	3½	S.	12	3	S.	10	3	S.	9	3	S.	9	3	S.	9	3	S.	8	3	S.	8
Horfles	3½			3½			3½			3½			3½			3			3		
Sheet-Pendent	3½			3½			3½			3½			3½			3			3		
Falls	2	*D.	8	2	*D.	8	2	*D.	8	2	*D.	8	2	*D.	8	2	*D.	7	2	*D.	7
Haliards or Bralls	2½	*S.	9	2½	*S.	9	2½	*S.	9	2½	*S.	9	2	*S.	8	2	*S.	7	2	*S.	7
Lacing to the Yard	1½	S.	6	1½	S.	6	1½	S.	6	1½	S.	6	1½	S.	6	1½	S.	6	1½	S.	6
Tack-Tackle	2	*D.	12	2	*D.	12	2	*D.	10	2	*D.	10	2	*D.	10	2	*D.	8	2	*D.	8
Downhaller	2½	*S.	12	2½	*S.	12	2	*S.	10	2	*S.	10	2	*S.	10	2	*S.	8	2	*S.	8
Lashing	2½			2½			2½			2½			2½			2½			2½		
Cross-Jack-Yard	4			4			4			4			4			4			4		
Span about the Cap	2½			2½			2½			2½			2½			2½			2½		
Braces	3½	S.	9	3½	S.	9	3	S.	8	3	S.	8	3	S.	8	3	S.	6	3	S.	6
Pendants	3	S.	9	3	S.	9	3	S.	8	3	S.	8	3	S.	8	3	S.	6	3	S.	6
Preventer	3	S.	9	3	S.	9	3	S.	8	3	S.	8	3	S.	8	3	S.	6	3	S.	6
Strapping	2½	S.	9	2½	S.	9	2½	S.	8	2½	S.	8	2	S.	7	2	S.	6	2	S.	6
Lifts, running	2½	S.	9	2½	S.	9	2½	S.	8	2½	S.	8	2	S.	7	2	S.	6	2	S.	6
Strapping	2½	S.	9	2½	S.	9	2½	S.	8	2½	S.	8	2	S.	7	2	S.	6	2	S.	6
Slings	5	S.do.fc.	16	4½	S.do.fc.	14	4	S.do.fc.	12	4	S.do.fc.	12	3½	S.do.fc.	11	3½	S.do.fc.	11	3	T.	1
Strapping	4			4			4			4			4			4			4		
Seizing	4			4			4			4			4			4			4		
Lashing	1½			1½			1½			1½			1½			1½			1½		

MISEN-TOPMAST.									
Shrouds	4 1/2	D. E.	8	8	4	D. E.	8	8	3 1/2
Tarred Line	2 1/2				2 1/2				2
Seatings	1				1				1
Laniards	4 1/2	D. E.	8	4	3 1/2	D. E.	6	2	3 1/2
Ratline	2 1/2				2 1/2				2
Standing-Backstays	4 1/2				4 1/2				4 1/2
Seizing	5				5				5
Laniards	2 1/2	T.			2 1/2	T.			2 1/2
Stay cabled 4 Strands	2 1/2	S.			2 1/2	S.			2 1/2
Laniards	4				4				4
Collar	1				1				1
Seizing & Lashing	2				2				2
Flagstaff Stay	4 1/2	T.			4 1/2	T.			4 1/2
Haliards	4 1/2				4 1/2				4 1/2
Shifting Backstays	2 1/2				2 1/2				2 1/2
Tackle	3	D.			3	D.			3
Strapping	4 1/2	*S.			4 1/2	*S.			4 1/2
Footlock-Shrouds	3				3				3
Seizing	4 1/2	*Pl. d. e.			4 1/2	*Pl. d. e.			4 1/2
Rutines	1				1				1
Top-Rope-Pendants	5 1/2	*S. I. bd.			5 1/2	*S. I. bd.			5 1/2
Falls	3	D. I. bd.			3	D. I. bd.			3
Tye	4	S. do. fc.			4	S. do. fc.			4
Haliard	2 1/2	D. th. c.			2 1/2	D. th. c.			2 1/2
Strapping	3 1/2	*S. th. c.			3 1/2	*S. th. c.			3 1/2
Lashing	1				1				1
Horses	3				3				3
Stirrups	2 1/2	T.			2 1/2	T.			2 1/2
Breaces	2 1/2	S.			2 1/2	S.			2 1/2
Pendants	3				3				3
Strapping	3 1/2				3 1/2				3 1/2

TABLE OF THE DIMENSIONS OF RIGGING, WITH THE SPECIES, SIZE, AND NUMBER, OF BLOCKS, &c. CONTINUED. 206

Names of the standing and running Rigging.	110 to 74 Guns.			64 Guns.			50 to 36 Guns.			32 to 28 Guns.			24 Guns.			22 to 20 Guns.			18 to 14 Guns.		
	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N
Lifts	2½	D.	9	2½	D.	9	2	S.	7	2	S.	7	2	S.	7	2	S.	7	2	T.	2
Strapping	3	S.	9	3	S.	9	2½	Par.	11	2	Par.	11	2	Par.	11	1½	Par.	11	1½	Par.	8
Paral-Ropes	2½	S. ft. bd.	16	2½	S. ft. bd.	14	2	S. ft. bd.	11	2	S. ft. bd.	11	2	S. ft. bd.	11	1½	S. ft. bd.	11	1½	S. ft. bd.	5
Clew-lines	2½	S.	9	2½	S.	9	2	S.	7	2	S.	7	2	S.	7	2	S.	7	2	S.	5
Strapping	2½	S.	8	2½	S.	8	2	S.	6	2	S.	6	2	S.	6	2	S.	6	2	S.	6
Bunt-Lines	2	S.	7	2	S.	7	2	S.	6	2	S.	6	2	S.	6	2	S.	6	2	T.	1
Strapping	2	S.	7	2	S.	7	2	S.	6	2	S.	6	2	S.	6	2	S.	6	2	S.	1
Leech-Lines	2	S.	7	2	S.	7	2	S.	6	2	S.	6	2	S.	6	2	S.	6	2	S.	1
Strapping	2	S.	7	2	S.	7	2	S.	6	2	S.	6	2	S.	6	2	S.	6	2	S.	1
Bow-lines	2½	S. T.	9	2½	S. T.	8	2	S. T.	6	2	S. T.	6	2	S. T.	6	2	S. T.	6	2	S. T.	5
Bridles	2½	S.	9	2½	S.	8	2	S.	6	2	S.	6	2	S.	6	2	S.	6	2	S.	4
Strapping	2½	S.	9	2½	S.	8	2	S.	6	2	S.	6	2	S.	6	2	S.	6	2	S.	4
Reef-Tackles	3	S.	7	3	S.	7	2	S.	6	2	S.	6	2	S.	6	2	S.	6	2	S.	4
Falls	1½	D.	7	1½	D.	7	2	S.	7	2	S.	7	2	S.	7	2	S.	7	2	S.	2
Strapping	2	S.	7	2	S.	7	2	S.	6	2	S.	6	2	S.	6	2	S.	6	2	S.	2
Ear-rings	1½	S.	7	1½	S.	7	2	S.	6	2	S.	6	2	S.	6	2	S.	6	2	S.	2
Sheets	5	S. Sho.	15	5	S. Sho.	14	2	S. Sho.	11	2	S. Sho.	11	2	S. Sho.	11	2	S. Sho.	10	2	S. Sho.	10
Strapping	5	S.	15	5	S.	14	2	S.	11	2	S.	11	2	S.	11	2	S.	10	2	S.	10
Seizings	4	S.	15	4	S.	14	2	S.	11	2	S.	11	2	S.	11	2	S.	10	2	S.	10
Lashing	4	S.	15	4	S.	14	2	S.	11	2	S.	11	2	S.	11	2	S.	10	2	S.	10
Stayfall-Hallards	1½	S.	9	1½	S.	8	2	S.	7	2	S.	7	2	S.	7	2	S.	6	2	S.	6

Sheets	2½	S.	9	2½	S.	8	2	S.	7	2	S.	7	2	S.	7	2	S.	6	2	S.	6
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TABLE OF THE DIMENSIONS OF RIGGING, WITH THE SPECIES, SIZE, AND NUMBER, OF BLOCKS, &c. CONTINUED. 308

Names of the standing and running Rigging.	110 to 74 Gums.			64 Gums.			50 to 36 Gums.			32 to 28 Gums.			24 Gums.			22 to 20 Gums.			18 to 14 Gums.		
	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N
Cat-Falls	6	Tt. I. bd.	26	5	Tt. I. bd.	22	4	Tt. I. bd.	18	4	Tt. I. bd.	16	3½	Tt. I. bd.	15	3	Fr. I. bc.	15	3	Fr. I. bc.	14
		Br. sh.	10		Br. sh.	10		Br. sh.	8		Br. sh.	8		S.	8		S.	8		S.	8
		S.	2		S.	2		S.	2		S.	2		T.	4		T.	4		T.	4
		T.	4		T.	4		T.	4		T.	4		S. Large	2		S. Large	2		S. Large	2
Laniards	3	S. Large	2	3	Ragged	2	2	Ragged	2	2	Ragged	2	2	Ragged	2	2	Ragged	2	2	Ragged	2
		Ragged	2		Staples.	2		Staples.	2		Staples.	2		Staples.	2		Staples.	2		Staples.	2
Stoppers	5			5			4			3½			3½			3½			3½		
Guy. { Mast-head	9½			8			7			6½			5½			5½			5½		
Fore	9			5			4			3½			3½			3½			3½		
After	6			9			7½			7			6			6			5½		
† Fifth Tackle Pendants	10	*S. c.	28	1	*S. c.	26	1	*S. c.	20	1	*S. c.	18	1	*S. c.	16	1	*S. c.	15	1	*S. c.	15
Fall	4½	L. t.	38	2	L. t.	36	2	L. t.	32	2	L. t.	30	2	L. t.	28	2	L. t.	26	2	L. t.	24
	7			6			5			4½			4			3½			3½		
Strapping	6½			5½			4½			4			3½			3½			3½		
Seizing	1½			1			1			1			1			1			1		
Laniards	1			3			2½			2½			2½			2½			2½		
Anchor-Stock { Tack	3	*D.	12	1	*D.	12	1	*D.	9	1	*D.	9	1	*D.	9	1	*D.	8	1	*D.	8
Fall	3	*S.	12	1	*S.	12	1	*S.	9	1	*S.	9	1	*S.	9	1	*S.	8	1	*S.	8
Bill-Pendants	5½	T.	12	2	T.	12	2	T.	4	2	T.	4	2	T.	4	2	T.	3	2	T.	3
Strapping	4	H.	1	1	H.	1	1	H.	3	1	H.	3	1	H.	3	1	H.	2½	1	H.	2½
Seizing	4			4			3			3			3			3			3		
Stoppers, Sheet, Anchor	9½			8			6½			6			5½			5			5		
Beet Bower	9			8			6½			6			5½			5			5		

† The Hook to the Fifth-Tackle-Pendant is to be large enough as with ease to hook the ring of the anchor.

Small Bower	9½			8			6½			6			5½			5			5		
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TABLE OF THE DIMENSIONS OF RIGGING, WITH THE SPECIES, SIZE, AND NUMBER, OF BLOCKS, &c. CONTINUED. 210

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TABLE OF THE DIMENSIONS OF RIGGING, WITH THE SPECIES, SIZE, AND NUMBER, OF BLOCKS, &c. CONTINUED. 212

Names of the standing and running Rigger.	110 to 74 Guns.			64 Guns.			50 to 36 Guns.			32 to 28 Guns.			24 Guns.			22 to 20 Guns.			18 to 14 Guns.		
	In.	Species.	In N	In	Species.	In N	In	Species.	In N	In	Species.	In N	In	Species.	In N	In	Species.	In N	In	Species.	In N
Ridge-Tackle Fall	2½	D.	9	2½	D.	8	2½	D.	8	2½	D.	7	2½	D.	7	2	D.	7	2	D.	7
For different Uses of the Ship	—	S.	5	—	S.	8	—	S.	8	—	S.	7	—	S.	7	—	S.	7	—	S.	7
	—	*Sn I. bd	22	—	*Sn I. d	17	—	*Sn I. bd	16	—	*Sn I. bd	15	—	*Sn I. bd	14	—	*Sn I. bd	14	—	*Sn I. bd	12
	—	Hks c.	16	—	Hks c.	13	—	Hks c.	13	—	Hks c.	12	—	Hks c.	12	—	Hks c.	10	—	Hks c.	10
Strapping	4½	—	4	4	—	12	4	—	12	4	—	11	4	—	11	3	—	—	—	—	9
Seizing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
LONG BOAT'S RIG- GING.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Burton-Pendants . .	4	S.	11	4	S.	9	3½	S.	5	3½	S.	8	3	S.	8	3	S.	8	—	—	—
Runner	3	T.	2	3	T.	2	2½	T.	8	2½	T.	2	2½	T.	2	2	T.	2	—	—	—
Falls	2½	*D.	9	2	*D.	8	2	*D.	8	2	*D.	8	2	*D.	8	2	*D.	8	—	—	—
Strapping	3	*S.	9	3	*S.	8	2½	*S.	8	2½	*S.	8	2½	*S.	8	2½	*S.	8	—	—	—
	4	—	5	3½	—	4	3	—	4	3	—	4	3	—	4	3	—	—	—	—	—
	1½	D. E.	5	1½	D. E.	5	1	—	—	1	—	—	1	—	—	1	—	—	—	—	—
Laniards	4½	D. E.	5	3½	T.	4	3½	T.	3½	1	3½	1	3½	T.	1	3½	T.	1	—	—	—
Stay	1½	—	1	1	—	1	1	—	—	1	—	—	1	—	—	1	—	—	—	—	—
Laniard	1½	—	1	1	—	1	1	—	—	1	—	—	1	—	—	1	—	—	—	—	—
Tye	3	S.	9	3	S.	9	1½	S.	6	1½	S.	6	1½	S.	6	1½	S.	6	—	—	—
Main Halliard . . .	2	S.	7	2	S.	6	1½	S.	6	1½	S.	6	1½	S.	6	1½	S.	6	—	—	—
Outer Halliard . . .	2	D. I. bd.	7	2	D. I. bd.	6	1½	D. I. bd.	6	1½	D. I. bd.	6	1½	D. I. bd.	6	1½	D. I. bd.	6	—	—	—
	—	*S.	7	—	*S.	6	1½	*S.	6	1½	*S.	6	1½	*S.	6	1½	*S.	6	—	—	—
	—	D.	8	—	D.	6	1½	D.	6	1½	D.	6	1½	D.	6	1½	D.	6	—	—	—
Sheet	2	*S.	8	2	*S.	8	1½	*S.	8	1½	*S.	8	1½	*S.	8	1½	*S.	8	—	—	—
Wood Hoops . . .	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Downhaller . . .	1½	S.	5	1½	S.	5	1	S.	5	1	S.	5	1	S.	5	1	S.	5	—	—	—

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TABLE OF THE DIMENSIONS OF RIGGING, WITH THE SPECIES, SIZE, AND NUMBER, OF BLOCKS, &c. CONTINUED. 214

Name of the standing and running Riggings.	110 to 74 Guns.			64 Guns.			50 to 36 Guns.			32 to 28 Guns.			24 Guns.			22 to 20 Guns.			18 to 14 Guns.		
	Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.			Blocks, &c.		
	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N	In.	Species.	In N
YAWL, OR CUTTER; OR BINNACE.																					
Main & Fore Halls	2	I. Tra.	2	2	I. Tra.	2	2	I. Tra.	2	I. Tra.	2	2	I. Tra.	2	I. Tra.	2	I. Tra.	2	I. Tra.	2	I. Tra.
Main {	2 1/2			2 1/2			2 1/2			2 1/2		2 1/2			2 1/2			2 1/2			2 1/2
Fore {	2 1/2			2 1/2			2 1/2			2 1/2		2 1/2			2 1/2			2 1/2			2 1/2
Grapple-Rope cabled	3 1/2	T.	1	3 1/2	T.	1	3 1/2	T.	1	3 1/2	T.	1	3 1/2	T.	1	3 1/2	T.	1	3 1/2	T.	1
Painter	3 1/2	T.	1	3 1/2	T.	1	3 1/2	T.	1	3 1/2	T.	1	3 1/2	T.	1	3 1/2	T.	1	3 1/2	T.	1
Sternfast	5 1/2	H. & T.	8 12	5 1/2	H. & T.	8 12	5 1/2	H. & T.	8 12	5 1/2	H. & T.	8 12	5 1/2	H. & T.	8 12	5 1/2	H. & T.	8 12	5 1/2	H. & T.	8 12
Slingers	1			1			1			1		1			1			1			1
Scuttings	1			1			1			1		1			1			1			1
Rudder-laniards	1			1			1			1		1			1			1			1

TABLES

OF THE

QUANTITIES AND DIMENSIONS

OF THE

Standing and Running Rigging

OF

BRIGS, CUTTERS, SLOOPs, and KETCHES.

A T A B L E

OF THE

QUANTITIES AND DIMENSIONS OF THE STANDING AND RUNNING RIGGING

OF

BRIGS OF 160 TONS.

Names of the standing and running Rigging.	Fath in		Blocks, &c.		Names of the standing and running Rigging.	Fath in		Blocks, &c.		Names of the standing and running Rigging.	Fath in		Blocks, &c.	
	Inch	Len.	Species.	In N		Inch	Len.	Species.	In N		Inch	Len.	Species.	In N
BOWSPRIT.														
Garmonings	4	26	—	—	Lifts	1½	20	S.	6	Out-Halter	2	12	—	—
Shrouds fine	4	8	—	—	Beckets	1½	2	—	—	Stay	2½	14	—	—
Collars fine	3	2½	—	—	Strapping	1½	12	—	—	Tackle-Fall	1½	12	S.	6
Seizings	—	—	T.	2	Standing	2	3	T.	4	Strapping	1½	1	—	—
Lashings	—	—	—	—	Straps	2	1½	—	—	Haliard	2	22	S.	7
Laniards fine	—	—	—	—	Laniards	—	3	—	—	Strapping	2	1	—	—
Bobflays cabled fine	4	11½	—	—	Haliard	1½	12	S.	6	Down-halter	1½	18	S.	6
Collars fine	4	3	T.	2	Strapping	1½	1	—	—	Sheets single	2½	18	S.	8
Seizings	—	—	—	—	Slings	3	3	—	—	FORE-MAST.				
Lashings	—	—	—	—	Seizing & Racking	—	5	—	—	Girdlines	2	35	S.	8
Laniards fine	2	9	—	—	Clew-lines	1½	16	St. bd.	6	Strapping	2	1	—	—
Straps	2½	9	—	—	Strapping	1½	14	—	—	Lashings	—	8	—	—
Laniards	2	2	T.	—	Bunt-Lines	1	14	—	—	Pendants of Tackle ca- }	6	5½	S. c.	13
Straps	1	4	—	—	Ear-Rings	1½	10	—	—	bled fine	—	2	T.	2
Laniards	—	—	—	—	Sheets cabled fingle	2½	22	—	—	Strapping	4	6	—	—
SPRITSAIL.					JIB.					Seizing	—	—	—	—
Horses	2	6	—	—	Horses	2½	9	—	—	Runners of Tackles	4	14	*D.	10
Braces	2	30	D.	7	Guy-Pendants	2½	20	—	—	Strapping	—	2	—	—
Strapping	2½	4	—	4										

TABLE OF THE QUANTITIES AND DIMENSIONS OF THE STANDING AND RUNNING RIGGING OF BRIGS. 217

Names of the standing and running Rigging.	In.	Fath in Len.	Blocks, &c.		Names of the standing and running Rigging.	In.	Fath in Len.	Blocks, &c.		Names of the standing and running Rigging.	In.	Fath in Len.	Blocks, &c.	
			Species.	In N				Species.	In N				Species.	In N
Falls of Tackles . . . }	2½	48	*S. th. c.	10 2	Strapping	2½	1	—	—	Buntline-Legs	1½	28	D.	6 4
Strapping	3	5	—	10 2	Lashing at the Mast-Head	2	16	—	—	Falls	1½	20	S.	6 6
Shrouds cabled fine . . .	5	47	D. E.	8	Horfes	3	7½	T.	2	Strapping	2	7	—	—
Seizings, Eye	½	60	—	—	Stirrups	2	2	T.	2	Leechine-Legs	1½	26	S.	6 6
Throat	½	60	—	—	Laniard	½	2	—	—	Falls	1½	26	—	—
Laniards, fine	3	40	—	—	Yard-Tackle-Pendants . . .	4½	6	D. th. c.	10 2	Strapping	1½	4	—	—
Ratling	1	60	—	—	Falls	2½	48	*S. th. c.	11 2	Slablins	1½	12	S.	5 1
Stay cabled fine 4 Strands	7½	7½	H.	10 1	Braces	4	2	S.	9 2	Bowlins	2½	28	S.	9 2
Seizings	3	7	—	—	Pendants	2½	44	S.	8 4	Bridles	2½	3	—	—
Laniard, fine	7½	8	—	—	Preventer	3	4	—	—	Strapping	3	2	—	—
Collar cabled 4 Strand }	4	3½	H.	10 1	Strapping	2½	5	—	—	Lashing	1	4	—	—
fine double	½	6	—	—	Lifis	2	3	—	—	Ear-Ring	1	20	—	—
Seizings	1½	4	—	—	Span for the Cap	3	40	—	—	Sheets cabled	3	36	S. c.	13 2
Lashing	5½	7½	H.	8 1	Short Span	2½	3	—	—	Strapping	3	2½	—	—
Preventer-Stay cabled 4 }	2½	7	—	—	Strapping	4	3	—	—	Seizing	4	7	—	—
Strands, fine	3½	3½	H. d. fe.	8 1	Trufs-Pendants	1½	26	—	—	Tacks taper and cabled .	4	22	—	—
Laniard, fine	3	6	—	—	Falls	2	3	—	—	Strapping	3	3	—	—
Collar cabled 4 Str.	3½	25	—	—	Strapping	2	3	—	—	Seizing	4	3	—	—
fine double	3	40	Euphroc.	12 1	Eye-Seizings	4	4	—	—	Strapping	1½	25	S.	7 6
Catharpin-Legs	1	1	—	—	Puddening the Yard . . . }	2	34	S.	8 4	Studing-fail-Hal. Inner .	2	42	S.	7 4
Seizings	1	1	—	—	Clew-Garnets	2	4	S. fl. bd.	8 2	Outer	2	7	—	—
Crowfoot for the Top . .	1	1	—	—	Straps about the Yard . . }	2	4	—	—	Sheets	2	32	S.	7 2
Tackle	5	40	S. th. c.	14 2	Strapping	2	1	—	—	Tacks	2	10	—	—
Strapping	2½	40	*D. co.	9 4						Strapping	2	4	H.	6 2
Jeers. { Tye	2½									FOR-TO-FAST.				
Falls	2½									Burton-Pendants }	2½	4	*S.	6 2
										Falls	1½	30	—	6 2
										Strapping	2	2	—	6 2

TABLE OF THE QUANTITIES AND DIMENSIONS OF THE STANDING AND RUNNING RIGGING OF BRIGS. 218

Names of the standing and running Rigging.	In.	Path in Len.	Blocks, &c.		Names of the standing and running Rigging.	In.	Path in Len.	Blocks, &c.		Names of the standing and running Rigging.	In.	Path in Len.	Blocks, &c.	
			Species.	In N				Species.	In N				Species.	In N
Shrouds, fine	3½	28	D. E.	6	Ladders at the Mast-Head	1	7	—	—	Strapping	1½	1	—	—
Seizings, Eye	—	½	of tarr'd Line	—	Yard	2	3	—	—	Ear-Rings	30	30	S. Sho.	12
Throat	—	1	Tarred Line	—	Halliards	3	3½	D. th. c.	10	Sheets	26	26	½ do. thk. & th.	12
End	2	24	—	—	Strapping	2½	2½	—	—	Straps for Sheet Blocks	4	4	—	—
Laniards, fine	—	35	—	—	Horses	2½	5½	S.	7	Quarter Blocks	3	5	—	—
Rating	3½	38	D. E.	6	Braces	2½	44	S.	7	Lashers for Quarter Blocks	1	5	—	—
Standing Backstays, fine	—	½	of tarr'd Line	—	Pendants	2	4½	—	—	Seizings	12	12	—	—
Seizings, Eye	—	1	Tarred Line	—	Strapping	2	3½	Sif.	14	Span	2½	3	—	—
Throat	—	16	—	—	Lifts	2	34	S.	7	Slings	2½	4½	—	—
End	2	13	—	—	Beckets	2	2	—	—	Stayfall-Stay	2½	13	S.	9
Laniards, fine	4	8	S.	12	Strapping	2	4	Par.	11	Tackle	2	6	S.	5
Stay cabled 4 Strands fine	3	2½	S.	7	Parral-Ropes	2	7	of a tar'd Line	—	Hallard	2	22	S.	7
Collar, fine	2	1½	—	—	Racking & Seizing	—	—	Sft. bd.	7	Strapping	2½	16	S.	8
Tackle	3½	7	—	—	Clew-Lines	2	44	S.	6	Sheets	2½	14	S.	5
Strapping	3½	9½	—	—	Strapping	2	4	—	—	Out-Haller	1	14	—	—
Seizing	1½	8	*D.	6	Bunt-Lines	1½	30	S.	6	Down-Haller	2	45	S.	7
Shifting-Backstays, fine	—	1	*S.	6	Strapping	1½	13	—	—	Strapping	2	9	S.	7
Tackles	2	11	*Fut. pla	6	Bow-Lines	2	32	S.	7	Studdingfall-Halliards	2	40	S.	7
Strapping	3½	20	—	—	Bridles	2	5	T.	6	Sheets	2	30	T.	6
Futtock-Shrouds, fine	—	10	—	—	Strapping	2	11	—	—	Tacks	2	10	—	—
Seizing Upper	—	10	—	—	Lashing	2	22	*S.	6	Tails and Straps	2	—	—	—
Lower	—	13	S. l. bd. c.	13	Reef-Tackle-Pendants	2	28	—	—	—	—	—	—	—
Rating	4½	30	D. l. b.	11	Falls	1	—	—	—	—	—	—	—	—
Top-Rope-Pendants, fine	2½	10	S. do. co.	11	—	—	—	—	—	—	—	—	—	—
Falls	3½	1	T.	1	—	—	—	—	—	—	—	—	—	—
Tye	3½	—	—	—	—	—	—	—	—	—	—	—	—	—
Strapping	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Names of the standing and running Rigging.		Blocks, &c.		Fath in Len.		Names of the standing and running Rigging.		Blocks, &c.		Fath in Len.	
In.	Len.	Species.	In	N	In.	Len.	In.	N	Species.	In	N
FORE-TOPGALLANT-MAST.						MAIN-MAST.					
2	32	T.	—	8	2½	44	S.	8	2	2½	28
2	8				2	8				3	8
2	24	T.	—	2	5	7	S. c.	13	2	1	7
2½	19	T.	—	1	4	2	—	—	—	2	28
2	18	—	—	—	4	6	—	—	—	3	8
2	14	—	—	—	4	16	D. th. c.	10	2	3	8
1½	14	S.	5	2	3½	50	S. th. c.	10	2	1	4
1½	14	—	—	—	3	5	D. E.	8	10	1	1
1	42	S.	5	4	5	40	—	—	—	3	34
1	22	T.	—	2	4	40	—	—	—	3½	10
1	2½	Par.	6	1	1	85	—	—	—	2	18
1	34	S.	5	4	1	11½	H.	12	1	4	8
1	42	—	—	—	3	9	—	—	—	4	8
1	2	—	—	—	3	4	H.	12	1	4½	6½
1	40	—	—	—	1	10	—	—	—	3½	54
1	12	—	—	—	3	9	—	—	—	4	2½
1	34	—	—	—	3	9	—	—	—	3	38
1	13	—	—	—	3	25	—	—	—	2	3
2	28	—	—	—	4	3	D. th. c.	11	1	2½	2½

TABLE OF THE QUANTITIES AND DIMENSIONS OF THE STANDING AND RUNNING RIGGING OF BRIGS. 220

Names of the standing and running Rigging.	In.	Fath in Len.	Blocks, &c.		Names of the standing and running Rigging.	In.	Fath in Len.	Blocks, &c.		Names of the standing and running Rigging.	In.	Fath in Len.	Blocks, &c.	
			Species.	In N				Species.	In N				Species.	In N
Lifts	2	46	S.	7	4	Studding-gail - Halliards, }	2	34	S.	9	6	Boom-Topping-Lift }	4½	16
Span for the Cap . .	2½	3	—	—	—	Inner	2½	58	S.	9	4	Strapping	3	7
Short Span	2½	1	—	—	—	Outer	2½	14	—	—	—	Fall	16	8
Strapping	2	3	—	—	—	Sheets	2	32	S.	9	2	—	—	—
Trufs-Pendants	4	11	T.	6	4	Tacks	2½	12	—	—	—	Strapping	3½	3
Falls	1½	30	*D.	6	2	Strapping	2½	7	T.	10	1	—	—	—
—	—	—	*S.	6	2	Boom-Guy-Pendants }	4½	20	*D.	10	1	—	—	—
—	—	—	Horse	7	1	Tackle-Fall	2½	5	*S.	10	1	—	—	—
Strapping	4	7½	down the Mast	7	1	Ditto	1½	22	*D.	6	2	MAIN-TOPMAST.	2½	4
—	—	—	Strap	7	1	Tricing-Line	1½	18	*D.	6	2	Burton-Pendants . . .	1½	34
Eye-Seizings	3	4	DE	—	—	Peck-Line	2½	20	S.	5	1	Falls	2	2
Laniards	2	6	—	—	—	Hanks	1	30	—	—	—	Strapping	3½	31
Seizings	3	25	S.	11	2	Trucks	1	3	—	—	—	Shrouds, fine	2	31
Sheets cabled	3½	40	*D.	10	2	Lacing	1½	3	—	—	—	Seizings, Eye	1	1
Strapping	2½	4	*S.	10	2	Strapping	1	1	S I. b.d.c.	13	1	Throats	2	4
Luff-Tackles	2½	11½	T.	—	—	Gaff-Topping-Lift }	4	3	—	—	—	End	2	40
—	—	—	—	—	—	Span	2½	24	T.	9	1	—	—	—
Strapping	4	2	—	—	—	Haliards	2½	1½	D.	9	1	Standing-Backstays, fine	3½	46
Stay-fail-Stay	3	6	—	—	—	Strapping	3½	2	*S.	9	1	Seizings, Eye	1	1
Collar	2	21	*S.	7	3	Tye	4	7½	—	—	—	Throat	2	16
Seizings	2½	7	S.	5	1	Haliards	2	28	S I. b.d.	13	1	End	4	13
Laniard	2	10	—	—	—	—	—	—	D.th	13	1	Stay cabled & Strands, fine	3½	2
Haliard	2	10	—	—	—	—	—	—	*S.th.	13	2	Collar, fine	2	12
Sheets	2	3	—	—	—	—	—	—	—	—	—	Tackle	2	7
Tacks	2	3	—	—	—	—	—	—	—	—	—	—	—	—
Down-Haller	1	10	—	—	—	—	—	—	—	—	—	—	—	—
Strapping	2	3	—	—	—	—	—	—	—	—	—	—	—	—

TABLE OF THE QUANTITIES AND DIMENSIONS OF THE STANDING AND RUNNING RIGGING OF BRIGS. 221

TABLE OF THE QUANTITIES AND DIMENSIONS OF THE STANDING AND RUNNING RIGGING OF BRIGS.

Names of the standing and running Rigging.	In.	Fath in Len.	Blocks, &c.		Names of the standing and running Rigging.	In.	Fath in Len.	Blocks, &c.		Names of the standing and running Rigging.	In.	Fath in Len.	Blocks, &c.	
			Species.	In N				Species.	In N				Species.	In N
Strapping	3	12	—	—	Lifts	2	36	Sif.	14	Span	2½	3	—	—
Seizings	2	12	—	—	Beckets	2	4	S.	7	Slings	2½	4½	—	—
Lashing	3½	12	—	—	Strapping	2	2	—	—	Stay-fail-Haliards	2	22	S.	7
Preventer-Stay cabled 4	1	6	—	—	Parral-Rope	2	7	Par.	11	Strapping	2	19	S.	7
Strands, fine	3½	10½	—	—	Racking & Seizing	2	48	of a tar'd S. ft. bd.	7	Sheets	2	2	—	—
Lashing the Collar	1½	8	T.	1	Clew-Lines	2	4	S.	7	Strapping	2	12	S.	5
Shifting-Backrays, fine	1½	12	*D.	6	Strapping	2	1½	—	—	Down-Haller	1	1	—	—
Tackles	3½	20	*S.	6	Bunt-Lines	1½	34	S.	6	Strapping	2	15	S.	9
Futtock-Shrouds, fine	4	12	*Pl. d.c.	6	Strapping	1	14	—	—	Middle Stay-fail-Stav	2	27	S.	6
Seizings, Upper	1	12	—	—	Leath-Lines	1	1	S.	5	Tackle	2	21	S.	7
Seizings, Lower	4	12	—	—	Strapping	2	34	—	—	Sheets	2	24	S.	7
Ratling	4	12	S.I.bd.	13	Bow-Lines	2	38	S.	7	Tack	1½	6	—	—
Top-Rope-Pendants, fine	2½	32	D.I.bd.c	11	Bridles	2	1	T.	6	Down-Haller	1	15	S.	5
Falls	3½	11	S.do ft.	11	Strapping	2	1	—	—	Strapping	2	4	—	—
Tye	3½	11	T.	1	Frapping & Lashing	2	7	—	—	Studding-fail-Haliards	2	50	S.	7
Strapping	1½	7	—	—	Reef-Tackle-Pendants	2	24	*S.	6	Sheets	2	10	S.	7
Lashers at the Mast-Head	4	3	D.th.c	10	Falls	1½	32	—	—	Tacks	2	42	S.	7
Yard	2	34	*S. th.c	10	Strapping	1½	4	—	—	Down-Hallers	2	32	T.	6
Haliards	2	24	—	—	Ear-Rings	3½	30	Sho. c.	12	Lashers for Booms	2	16	—	—
Strapping	2½	5½	—	—	Sheets	4	3	D.th.k. & th.	12	Tailing & Strapping	2	10	—	—
Horses	2	45	S.	7	Straps for Sheet-Blocks	4	3	—	—	MAIN-TOP GALLANT MAST.	—	—	—	—
Braces	2½	5	S.	4	Quarter-Blocks	1	5	—	—	Shrouds	2	32	T.	8
Pendants	2	2½	—	—	Lashers for Quarter-Bl.	1	12	—	—	Laniards	2	27	T.	12
Strapping	2	2½	—	—	Seizings	4	12	—	—	Standing Backstays	2	6	—	—

TABLE OF THE QUANTITIES AND DIMENSIONS OF THE STANDING AND RUNNING RIGGING OF BRIGS. 223

Names of the standing and running Rigging.	In.	Fath in Len.	Blocks, &c.		Names of the standing and running Rigging.	In.	Fath in Len.	Blocks, &c.		Names of the standing and running Rigging.	In.	Fath in Len.	Blocks, &c.	
			Species.	In N				Species.	In N				Species.	In N
Stay	2½	14	T.	—	NECESSARY ROPES.	2½	36	D.I.bd.c.	11 2	Seizing	½	10	—	—
Strapping	2	18	—	—	Cat-Falls	1	4	—	—	Buoy - Rope's Sheet-Anchor cabled	4	18	—	—
Flagstaff-Halliards	2	9	—	—	Laniards	1½	2	—	—	Belt Bower cabled	4	18	—	—
Tye	1½	16	S.	5 2	Stoppers	4	20	—	—	Small Bower cabled	3	18	—	—
Haliard	1½	14	—	—	Guy's Mast-Head	4	12	—	—	Stream Anchor cabled	2½	16	—	—
Strapping	1½	4	—	—	Fore	2½	14	—	—	Kedge cabled	2½	9	—	—
Horses	1	44	S.	5 4	After	4	3	H.1 & T.	2	Ropes, Entering	2½	130	—	—
Braces	1	23	T.	—	Fifth-Tackle-Pendent	4	4	—	—	Quarters & Stantions in the Waffe	2	10	S.	7 4
Strapping	1	23	Par.	6 1	Stoppers, Sheet-Anchor	4	4	—	—	Wheel, or Tiller, } White	2	2	—	—
Lifts, single	1	36	S.	5 4	Belt Bower	4	10	—	—	Strapping	2	2	—	—
Parral-Ropes	1	1½	T.	—	Stream Anchor	2½	3	—	—	Puddening of Anchors } Seizings	2½	14	—	—
Clew-Lines	1	42	T.	—	Kedge	2	12	T.	6	Slings, Buoy	2½	36	—	—
Strapping	1	4	—	—	Deck & Bit cabled	6	16	—	—	Laniards	1	36	—	—
Bridles	1	17	of a tar'd Line	7 1	Laniards	2	36	—	—	Seizing	4	16	—	—
Ear-Rings	2	24	S.	5 2	Seizing	4½	9	—	—	Butt	4½	5	T.	2
Stay-fail-Stay	1	26	S.	4 2	Stoppers Preventer	4	9	—	—	Hoghead	3½	8	T.	3
Haliard	1	4	S.	—	Ditto	3½	9	—	—	Can-Hook	3½	4	—	—
Sheets	1	18	S.	6	Ditto	3	11	—	—	Straps for wood Buoys	3	4	—	—
Tacks	1	48	S.	—	Shank-Painters Sheet-Anchor cabled	4	4	—	—	Swabs	1½	9	—	—
Down-Haller	1	30	—	—	Belt Bower	4	4	T.	1	Cable-Bends	1½	32	—	—
Strapping	1½	38	—	—	Small Bower	4	4	T.	1	Futtock-Staves	4	4	—	—
Studding-fail-Haliards	1½	28	—	—										
Sheets	1	32	—	—										
Tacks	1	32	—	—										
Down-Hallers	1	32	—	—										
Royal Haliards	2	32	—	—										

TABLE OF THE QUANTITIES AND DIMENSIONS OF THE STANDING AND RUNNING RIGGING OF BRIGS. 223

Names of the standing and running Rigging.	In.	Fath in		Blocks, &c.		Names of the standing and running Rigging.	In.	Fath in		Blocks, &c.		Names of the standing and running Rigging.	In.	Fath in		Blocks, &c.	
		Len.	Species.	Len.	Species.			Len.	Species.	Len.	Species.			Len.	Species.		
Lashing Cables between Decks, Sheep Pens, Steep-Tubs, Tubs in the Tops, & Rooms	4	220	—	—	—	For different Uses of the Ship	—	—	—	—	—	Painter	3	5	T.	—	
Haliard for Ensigns	4	12	—	—	—	PINNACE, YAWL OR CUTTER. Main & Fore Haliards	1 1/2	10	—	—	—	Sternfast	2	5	H.&T.	—	
Jacks	4	8	—	—	—	Sheets	1 1/2	10	—	—	—	Seizings	4 1/2	7	—	—	
For Head-Line	—	1 lb.	—	—	—	Grapple-Rope cabled	3	35	—	—	—	Rudder-Laniards	4	10	—	—	
Rope-Bands	—	—	—	—	—												
Pendent-Slings	4	18	—	—	—												

A T A B L E

OF THE

QUANTITIES AND DIMENSIONS OF THE STANDING AND RUNNING RIGGING OF CUTTERS OF 200 TONS.

Names of the standing and running Rigging.	Inch	Fath in Len.	Blocks, &c.		Names of the standing and running Rigging.	Inch	Fath in Len.	Blocks, &c.		Names of the standing and running Rigging.	Inch	Fath in Len.	Blocks, &c.	
			Species.	In N				Species.	In N				Species.	In N
ROWSPRIT.														
Shrouds	5½	14	—	—	Down-Haller	2	30	*S.	8	Worming	1½	60	—	—
Tackle-Falls	2½	38	*D.	10	Jack-Tackle	2½	10	*S.	8	Lashing	2	25	D. E.	9
JIB.					Bow-Line	3	14	*S.	10	Preventer-Stay cabled } 4 Strands	6½	18	L. b.	9
Haliard	5	35	S. c.	14	Sheets	3	7	*S.	10	Laniards, fine	3	4	—	—
Tackle-Fall	3½	40	Tr. c.	12	MAIN-MAST.			S.	9	Seizing	1	9	S. l. b. d. c.	12
Jack	6½	24	Sn. l. b. d. c.	15	Gird-Lines	2½	50	—	—	Boom-Topping-Lifts	4½	26	S. c.	12
Sheets cable-laid	5	18	*S.	14	Lashing	6	26	S. c.	15	Runner	4	12	S. c.	13
Downhaller	2	24	S.	8	Pendants of Tackle	5½	24	*L. t. c.	20	Fall	2½	32	D. c.	12
Inhaller	2½	15	D. c.	8	Runners of Tackles	3½	45	*S. c.	11	Guy-Pendent	5	9	*S. c.	9
Heelrope	3	21	*Sn c.	8	Falls	8	84	D. E.	12	Tackle-Fall	3	30	T.	12
Flying-Jib-Haliard	2½	35	Sn l. b. d. c.	13	Shrouds cabled, fine	1	68	—	—	Gaff-Span	4½	5	*D.	12
Sheets	2½	24	—	—	Setlings, Eye	4	40	—	—	Down-Haller-Peck	2	38	S.	8
Down-Haller	2	24	—	—	Throat	1½	120	—	—	Throat	6	13	S. l. b. d. c.	14
FORE-MAST.					End	1½	10	D. E.	18	Inner Tye	3	56	D. c.	14
Sail-Haliards	2½	50	D. c.	10	Laniards, fine	4	10	—	—	Haliard	3	14	—	—

TABLE OF THE QUANTITIES AND DIMENSIONS OF THE STANDING AND RUNNING RIGGING OF CUTTERS. 225

Names of the standing and running Rigging.	In.	Fath in Len.	Blocks, &c.		Names of the standing and running Rigging.	In.	Fath in Len.	Blocks, &c.		Names of the standing and running Rigging.	In.	Fath in Len.	Blocks, &c.	
			Species.	In N				Species.	In N				Species.	In N
Outer Tye	6	19½	—	—	Bridles	2	7	T.	6	Stirrups	2	8	—	—
Haliards	3½	90	S.I. bd.c.	12 3	Sheets	3½	42	S. Sha.	10 2	Horse down the Mast . .	5	25	D. E.	7 ?
Ear-Rings, Inner . .	1½	18	D. c.	12 2	Quarter-Blocks . . .	2	33	D&Dfc.c	12 1	Strap	3½	4	—	—
Sheet	3	60	Tr. c.	15 2	Tryfail-Sheet	2	24	*Tr.	11 2	Laniard	2½	5	—	—
Tack-Tackle	2½	20	*D.	8 1	Down-Haller	2	24	—	—	NECESSARY ROPES.				
Luff-Tackles	2½	40	*S.	11 2	Lacing	2	96	—	—	Cat-Falls	3	44	D.I. bd.c.	12 2
Main-Keef-Pendants, fine	5	7	*D.	8 1	Studdingfail-Haliards .	2	38	—	—	Fifth-Tackle-Pendent . .	4	3	H. & T.	1 1
TOP-MAST.	5	9	*S.	11 2	Tacks	2	90	—	—	Stoppers, Sheet-Anchor	5	5	—	—
Tackle-Fall	3	30	—	—	Down-Hallers	2	30	—	—	Belt Bower	5	5	—	—
Tye	3	26	*L.t.	10 1	TOP GALLANT-MAST.	2½	60	—	—	Small Bower	5	5	—	—
Haliard	2	32	*S.	9 1	Standing Backstays . .	2	28	*S.	8	Stream-Anchor	2½	3	—	—
Horses	2½	8	—	—	Tackles	2	30	—	—	Kedge	2	3	T.	—
Braces	2	60	*S.	11 1	Stay	3	40	S.	9 2	Deck & Bit cabled . . .	6½	7½	—	—
Lifts	2	45	—	—	Haliards	4	28	D.	9 1	Laniards	2	10	—	—
Paral-Ropes	2	45	—	—	Top-Rope	4	45	*S.	9 1	Seizings	4	20	—	—
Racking & Seizing . .	1½	10	D.	9 1	Fall	2	30	S.	8 2	Shank-Painters Sheet- }	4	6	—	—
Clew-Lines	1½	44	*S.	9 1	Tricing-Line	2	30	—	—	Anchor cabled }	4	4	—	—
Bunt-Lines	1½	44	S.	8 2	Clew-Lines	2	40	—	—	Belt Bower	4	4	—	—
Bow-Lines	2	66	S. par.	12 1	Braces	2½	60	S.	8 2	Small Bower	4	4	—	—
			—	—	Sheets	2½	14	—	—	Buoy - Rope Sheet- }	4	18	—	—
			—	—	Haliard	2½	50	D.c.	9 1	Anchor cabled }	4	18	—	—
			—	—	Lifts, running }	3	35	*S. c.	9 1	Belt Bower cabled . . .	4	18	—	—
			—	—	Bunt-Lines	2½	14	S.	8 2	Small Bower cabled . .	4	20	—	—
			—	—	Tacks	2½	14	—	—	Stream-Anchor cabled	3	20	—	—
			—	—	Horses	2	12	—	—	Kedge cabled	3	20	—	—
			—	—				—	—	Entering	3	10	S.	7 2
			—	—				—	—	Wheel, White	2	12	—	—

TABLE OF THE QUANTITIES AND DIMENSIONS OF THE STANDING AND RUNNING RIGGING OF CUTTERS.

Names of the Standing and running Rigging.		Fath in In.	Blocks, &c.		Fath in In.	Names of the Standing and running Rigging.		Fath in In.	Blocks, &c.		
			Species,	In	N				Species,	In	N
Puddening of Anchors {		2½	—	—	—	BOAT.		10	—	—	—
		2	—	—	—	Main & Fore Haliards .		10	—	—	—
		2½	—	—	—	Main & Fore Sheets...		10	—	—	—
		1½	—	—	—	Grapnel-Ropes cabled .		35	—	—	—
		4	—	—	—	Painter		5	—	—	—
Slings, Buoy		3	—	—	—	Slings		5	—	—	—
Hoghead		4	—	—	—	Seizings		10	—	—	—
Can-Hooks		1½	—	—	—	Rudder-Laniards. . . .		1	—	—	—
Cable-Bends		34	—	—	—	Sternfast		5	—	—	—
Nettings for the Tops, Quarters, Waffe, & Barricadoes		540	—	—	—				—	—	—
Hallard for Ensigns . .		20	—	—	—				—	—	—
Slings, Pendant, &c. .		24	—	—	—				—	—	—
For different Uses of the Ship		—	—	—	—				—	—	—
Ridge-Ropes for the Quarters		2½	—	—	—				—	—	—

FITTING THE RIGGING IN THE HOUSE.		Fath in In.	Blocks, &c.		Fath in In.
			Species,	In	N
Spun yarn		20 Cwt.	—	—	—
Lines, tarred		8 No.	—	—	—
Marline		15 lb.	—	—	—
Old Canvas		140 Yards.	—	—	—
Tar		1½ Barrels.	—	—	—
Tallow		38 lb.	—	—	—
Twine Ordinary		2 lb.	—	—	—
Length of the Warp of the Main Shroud, 18 Yards			—	—	—

OF THE

QUANTITIES AND DIMENSIONS OF THE STANDING AND RUNNING RIGGING
OF
SLOOPS OF 130 TONS.

Names of the standing and running Rigg.					Names of the standing and running Rigg.					Names of the standing and running Rigg.				
Inch	Fath in Len.	Blocks, &c. Species.	In	N	Inch	Fath in Len.	Blocks, &c. Species.	In	N	Inch	Fath in Len.	Blocks, &c. Species.	In	N
3½	10	H.	8	2	3	5	S.	9	1	1	50	—	—	—
2½	2½	—	—	—	3	5½	S.	10	1	3½	27	*S. l. bd.	13	1
3½	12	—	—	—	2½	24	D.	9	2	3	10	S.	13	1
2	12	*S.	8	2	—	—	*S.	9	2	—	—	S.	11	1
3	13	T.	—	2	—	—	S.	9	2	2	20	D.	9	1
1	3½	—	—	—	2½	50	—	—	—	4½	7	*S.	9	1
2½	3	T.	—	2	1	12	S. c.	14	2	2½	20	*D.	9	1
—	—	—	—	—	4½	22	*S. c.	14	2	—	—	*S.	9	1
4½	21	—	—	—	2½	46	*S. th. c.	14	2	4½	5	—	—	—
2½	33	*S.	9	2	6	78	D. E.	10	8	2	22	S.	7	2
3½	20	*S.	10	2	—	—	—	—	—	2	32	S. l. bd. c.	15	3
1½	22	S.	6	1	1	60	—	—	—	2	14	S. l. bd. c.	15	3
—	—	—	—	—	—	—	—	—	—	4½	36	*D. th. c.	19	2
2½	32	*S.	9	2	2½	32	—	—	—	2½	15	S. l. bd. c.	15	1
1½	15	—	—	—	1	146	—	—	—	4½	40	*D. th. c.	19	2
1	4	—	—	—	9	12	—	—	—	2½	4	—	—	—
3	12	—	—	—	1½	9	D. E.	17	1	1½	8	—	—	—
3	1½	—	—	—	3	10	—	—	—	3½	9	—	—	—
Gunwain.					Sheets.					Worming.				
Laniards.					Fore Burton-Pendants.					Boom-Topping-Lift.				
Shrouds.					Falls.					Runner.				
Tackle-Falls.					MAIN-MAST.					Fall.				
Horses.					Gird-Lines.					Guy-Pendent.				
Laniards.					Lashings.					Tackle-Fall.				
Strap.					Pendants of Tackle.					Gaff-Span.				
Stay cabled 4 Strands, fine					Runners of Tackles.					Down-Haller-Peek.				
Hallard					Falls.					Throat.				
Sheets cable-laid.					Shrouds cabled, fine					Inner Tye.				
Downhaller.					Seizings, Eye.					Haliard.				
Sail-Haliards.					Throat End.					Outer Tye.				
Down-Haller.					Laniards, fine.					Haliard.				
Tack-Tackle.					Rattling.					Outer Tye.				
Bow-Line.					Stay cabled 4 Str. fine.					Haliard.				
Bridles.					Seizings, fine.					Ear-Rings, Inner.				
					Laniard, fine.					Outer.				
										Reef.				

TABLE OF THE QUANTITIES AND DIMENSIONS OF THE STANDING AND RUNNING RIGGING OF SLOOPS. 213

Names of the standing and running Rigging.	In.	Fath in Len.	Blocks, &c.		Names of the standing and running Rigging.	In.	Fath in Len.	Blocks, &c.	
			Species.	In N				Species.	In N
Lacing	1	14	—	—	Stoppers, Sheet-Anchor	3	8	—	—
Sheet	3	36	D.	14	Belt Bower	3	8	—	—
Rope	2	5	—	—	Small Bower	3	8	—	—
Tack-Tackle	1½	7	*D.	7	Stream-Anchor	3	8	—	—
Luff-Tackles	2	16	*S.	8	Kedge	3	8	—	—
TOP-MAST.			*D.	8	Anchor cabled	3	8	—	—
Hallard	2	30	*S.	8	Belt Bower	3	8	—	—
Braces	1½	36	—	—	Small Bower	3	8	—	—
Lifts	1½	34	—	—	Buoy-Rope Sheet	2½	18	—	—
Bow-Lines	1½	34	—	—	Anchor cabled	2½	18	—	—
Brilles	1½	4	T.	—	Belt Bower	2½	16	—	—
Sheets	1½	34	—	—	Small Bower	2½	25	worn	—
CROSS-JACK-YARD.			—	—	Puddening of Anchors	2	25	worn	—
Braces	1½	40	S.	6		2	25	worn	—
Sheets	2½	15	—	—		2	25	worn	—
Hallard	2	48	*D.	8		2	25	worn	—
Tacks	2½	15	H.&T.	2	Buoy-Slings	2½	10	—	—
Horé down the Mast	4	15	T.	—	Hoghead-Slings	3	3	T.	—
Yard-Ropes	2	40	S.	8	Cable-Bends	1	12	—	—
NECESSARY ROPES.			—	—				—	—
Cat-Falls	3½	8	D.I.b.	12	Painter	3	7	—	—
Fish-Tackle-Pendants	3½	5	H.&T.	1				—	—

FITTING THE RIGGING IN THE HOUSE.

Spun yarn 8 Cwt.
 Lines, tarred 4 No.
 Marline 10 lb.
 Old Canvas 50 Yards.
 Tar 28 lb.
 Tallow 1 lb.
 Twine Ordinary 1 lb.
 Length of the Warp of the Main Shrouds, 17 Yards.

ENDING RIGGING

A T A B L E

QUANTITIES AND DIMENSIONS OF THE STANDING AND RUNNING RIGGING
 OF
 KETCHES OF 150 TONS.

Names of the standing and running Rigging.	In.	Fath in Len.	Blocks, &c. Species.	In	N	Names of the standing and running Rigging.	In.	Fath in Len.	Blocks, &c. Species.	In	N	Names of the standing and running Rigging.	In.	Fath in Len.	Blocks, &c. Species.	In	N
BOUSPRIT.																	
Strap	2½	3	—	—	—	Haliard	1½	55	S.	7	2	Runners of Tackles	3½	12	*L. t.	20	
Gammoning	3½	20	—	—	—	Down-Haller	2	20	*S.	7	1	Falls	2	64	*S.	11	2
Shrouds, fine	3½	14	—	—	—	Brails	1½	20	—	—	—	Shrouds cabled, fine	6	120	D. E.	9	12
Laniards, fine	1	6	*D. E.	7	4	Laniards	2	17	—	—	—	Seizings, Eye	1	100	—	—	—
Bobstays cabled, fine	3	6	H. & T.	6	2	Boom-Haliards	1½	18	—	—	—	Seizings, Throat	1	50	—	—	—
Collars, fine	2½	3	D. E.	6	2	Inhaller	1½	18	—	—	—	Worming	1	50	—	—	—
Laniards, fine	1½	3½	—	—	—	FORE-MAST.						Worming	1	50	—	—	—
Horses	3	14	—	—	—	Haliard	2½	30	L. Cring.	—	30	Laniards, fine	3	48	—	—	—
Laniards	1½	4	worn	—	—	Down-Haller	1½	16	*S.	3	2	Rating	1	160	—	—	—
Sheets cabled	2	16	—	—	—	Bow-Lines	2	20	\$.	7	1	Stay cabled 4 Strands, fine	10	12	D. E.	16	
Ropebands & Ear-Rings	4	25	—	—	—	Sheets tapered & cabled	2½	40	*D.	10	4	Seizings	1	8	—	—	—
Haliards	2½	16	\$.	8	1	MAIN-MAST.						Worming	1	64	—	—	—
Stay cabled 4 Strands	4½	24	L. Cring.	—	30	Gird-Lines	2½	40	—	—	—	Laniards, fine	3½	18	—	—	—
Sheets	4½	16	S.	10	2	Lashings	1	8	S.	9	2	Moufcing	1½	45	—	—	—
Tack	2	28	H. & T.	1	1	Pendants of Tackles	4	12	*L. t.	10	1	Catharpin-Legs	3½	16	*S.	11	2
Haliard	2	36	*S.	10	1	cabled, fine	4	12	*S.	12	1	Burton-Tackle-Runners	2	24	*S.	13	1
						Seizings	4	10	—	—	—	Falls	2	24	Euphroe.	14	1
												Crowfoot for the Top	1	24	—	—	—

TABLE OF THE QUANTITIES AND DIMENSIONS OF THE STANDING AND RUNNING RIGGING OF KETCHES. 230

Names of the standing and running Rigging.	In.	Fath in Len.	Blocks, &c.		Names of the standing and running Rigging.	In.	Fath in Len.	Blocks, &c.		Names of the standing and running Rigging.	In.	Fath in Len.	Blocks, &c.	
			Species.	In N				Species.	In N				Species.	In N
Tackle	1½	3	S.	7	2	Tacks tapered & cabled	5½	26	—	Runners, fine	3½	14	S.	8
Jeers. { Tye	4½	44	D.	15	1	Wingfall Guy&Lee Fangs	1½	30	—	Laniards	1½	4	—	7
Lafers to the Mast-Head	2	10	S.	15	3	Haliard	2	40	D.	Shifting-Backstays, fine	3½	16	T.	—
Yard	2	10	—	—	—	Sheets	2	44	—	Tackle	1½	10	*S.	7
Horses	3	10	T.	—	—	Topping-Lift	2	36	—	Seizings	½	5	—	2
Laniards	1½	4	—	—	—	Span	2	3	—	Futtock-Shrouds, fine	3½	10	PL d.e.	6
Braces	2½	50	S.	10	2	Luff-Tackle	2	20	*L. t.	Seizings, Upper	½	12	—	—
Pendants	3	60	S.	10	2	Studdingfall - Haliards, {	2	40	*S.	Seizings, Lower	½	12	—	—
Lifts	2½	3	S.	10	2	Inner & Outer	1½	10	S.	Rattling	4½	13	T.	—
Span for the Cap	3½	14	S.	10	2	Sheets	1½	20	—	Top-Rope-Pendent, fine	2	40	*D.	—
Paral-Ropes	1½	18	Par.	16	1	Tacks	1½	20	—	Fall	3½	14	*S.	—
Nave-Lines	1½	18	—	—	—	MAIN-TOPMAST.	3½	33	*D. E.	Tye	1	4	S.	12
Racking & Seizings	1	18	—	—	—	Shrouds, fine	½	9	—	Lafers at the Mast-Head	1	4	—	—
Main	1½	26	S.	7	2	Seizings, Eye	½	9	—	Yard	2	34	D.	—
Brails, Middle	1½	26	T.	—	—	Throat	½	9	—	Haliard	2	34	*S.	—
Lower	1½	24	T.	—	—	End	½	9	—	Horses	2½	7	—	—
Hanks	2	15	—	—	—	Laniards, fine	2	38	—	Braces	2½	50	S.	8
Trufs { Pendants	4	9	—	—	—	Rading	½	50	—	Pendants	2½	6	S.	8
Falls	2	12	D.	7	1	Standing - Backstays, {	3½	30	D.E.I.bd	Lifts	2	52	S.	8
Clew-Garnets	2½	60	S. str.	10	4	fine	3½	30	with Hks	Beckets	2	2	—	—
Buntline-Legs-Falls	2	80	L. Bundl.	14	8	Seizings, Eye	½	10	—	Paral-Ropes	2	8	Par.	—
Leechline-Legs-Falls	2	40	S.	8	4	Throat	½	10	—	Racking & Seizing	½	8	—	—
Bow-Lines	4	36	S.	14	4	End	2	10	—	Clew-Lines	2	60	S. fl. bd.	7
Bridles	4	12	D.	—	—	Laniards, fine	2	10	—	Bunt-Lines	1½	30	S.	7
Ropebands & Ear-Rings	1	60	T.	—	—	Stay cabled 4 Strands, {	3½	26	S.	—	—	—	—	—
Sheets tapered & cabled	4½	18	S. Sho.	—	2	fine	3½	26	—	—	—	—	—	—

SYSTEM OF THE FIVE SENSES
OF THE HUMAN MIND
BY J. L. KELCHER